

ROCKS MINERALS

Mineralogy

Geology

Crystallography



Pyrite, Antimony, copper, and arsenic
Size 20" x 8" x 5". Weight 10 lbs.
Collector: Franklin, Spain

60c

November - December 1936

Whole No. 10

A Selection of Books, Mainly Scarce

MANCHESTER, James G. The Minerals of New York City and Its Environs 127 black and white plates. New York. 1931	\$10.00
The minerals of Broadway, N.Y.C. 1914. Paper. 52 pp. Plates	\$3.00
SPENCER, L. J. The World's Minerals, New York. 1916. with appendix by W. D. Hamman. 40 colored plates. 272 pages. Original cloth	\$10.00
GRATACAP, L. P. A Popular Guide to Minerals, New York. 1912. 74 photo- graphic plates (1 colored). 330 pp. Fine condition.	\$7.50
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ROCKS and MINERALS

PETER ZODAC, Editor and Publisher

America's Oldest and Most Versatile
Magazine for the Mineralogist, Geo-
logist, Lapidary.

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ASSOCIATION

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November-December, 1956

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CHIPS FROM THE QUARRY

Christmas Greetings

The Editor of Rocks and Minerals desires to wish for all subscribers, advertisers, readers and friends a very merry Christmas and a happy New Year.

May 1957 bring to each and every one of you Happiness, Prosperity, Contentment and a renewed interest in the wonderful beauty, charm and diversity of the mineral kingdom in which we are all so interested.

Coming Events

March 9, 10, 1957—Tucson Gem & Mineral Society 3rd Annual Mineral Show in Pima County Fair Grounds. For details address 2215 E. 7th St., Tucson, Ariz.

Gillette quarry at Haddam Neck, Conn., closed to collectors

Editor R&M:

A note for your next issue.

The famous Gillette feldspar quarry at Haddam Neck, Conn., is now closed to collectors. The owners are afraid someone will get hurt and sue them—hence it is now barred to all collectors.

Franklin Pierce
Bldg. 34, Apt. 509
Marina Village
Bridgeport, Conn.

Nov. 6, 1956

Club proposed for Harrisburg, Pa. area

Perhaps someone can give me some idea as to how I can make it known to the people in central Pa. and especially around Harrisburg who are collectors and mineral enthusiasts that I am in the process of trying to form a mineral club. I know about the Mineralogical Society of Pa. but that centers around Phila. which is too far for most of our local people who might be interested.

Ermon Mayfield
260 S. 2nd St.,
Steelton, Pa.
WE. 9-6648

Photo on the cover

The photo on the cover of this issue is of an attractive xled pyrite in the collection of Juan Montal, Paltza Sgdo. Corazon No. 1 Villafranca del Panades, Spain. The specimen is 10" x 8" x 5" in size, weighs 20 lbs., and its locality is Ambasaguas, Logrono Province, Spain.

Mr. Montal, one of Spain's well-known collectors, has supplied R&M with many items on Spanish minerals and their localities.

R & M As Door Prize!

Editor R&M:

Last evening at our Geology Club meeting we offered Rocks and Minerals Magazine for a year, as a door prize. Mr. Lee Blackwell, 223 N. 9th St., Canon City, Colo., won it.

Your magazine is still our inspiration and guide.

F. C. Kessler, Secretary,
Canon City Geology Club,
Canon City, Colo.

Oct. 16, 1956

ATTENTION SUBSCRIBERS!

ROCKS and MINERALS comes out once every two months as follows:

Jan. - Feb., out about.....	Feb. 20
March - April, out about.....	April 20
May - June, out about.....	June 20
July - August, out about.....	Aug. 20
Sept. - Oct., out about.....	Oct. 20
Nov. - Dec., out about.....	Dec. 20

Quartz and Scheelite In Spain

By Juan Montal

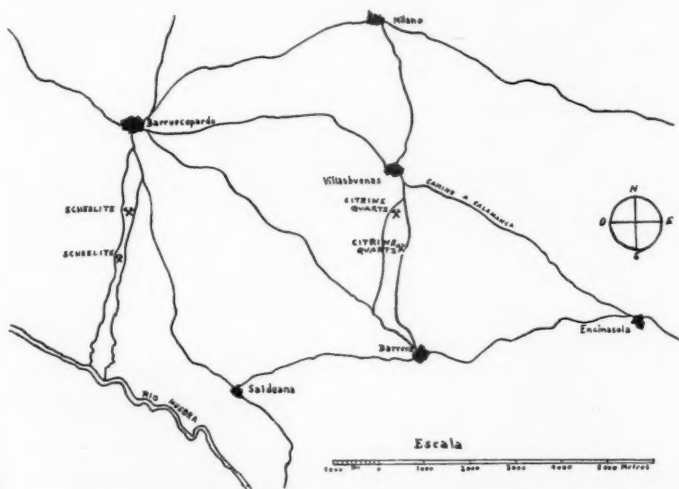
Plaza Sagrado Corazon 1, Villafranca Del Panades, Spain

Quartz is found in Spain in every sort of deposit characteristic of this important and widely-distributed mineral species. In the older rocks, it is present in lodes, and comprises the gangue in the great metalliferous mines, or forms small veins in the crystalline, semi-crystalline, or amorphous state. The great quartz lodes are found, as might be expected, in granite, gneiss, and the older sediments and metasediments. Among the more notable quartz occurrences in Spain are the great lode in the granite of the Veta del Cura, near Hedroso, in the province of Zamora, which is some 50 meters (one meter approximates 3-1/3 feet) thick; that of Atalaya de San Ildefonso, in the Sierra de Guadarrama, which extends for 21/2 kilometers (1 kilometer approximates 5/8 of a statute mile); and various others

in the province of Caceres which run for several kilometers.

In the gneiss of the province of Zamora, the tin-bearing veins of Perezuela are cut by an enormous quartz vein, ten meters thick and more than a kilometer long. So numerous are the lodes, masses, and veins of quartz which are known in the Cambrian and Silurian rocks of Spain, that a listing of them cannot be given here.

All of these quartziferous formations produce good crystals from the surface, or in vugs (geodas interiores). Microscopic or macroscopic fragments of various oxides, metals, and silicates are included in some of these crystals. One example worth special mention is the cinnabar-impregnated quartz of Almaden and Utrillas.



Sketch map showing locations of the Villasbuenas quartz workings and the Barruecopardo tungsten mines, Province of Salamanca, Spain. This area is in the northwestern part of the Province, between the city of Salamanca and the Portuguese frontier. Approximate geographical position, in round numbers, is Lat. 41° N.; Long. 6° W.; Alt. 2500 + feet MSL. Place names are in peninsular Spanish; mineral names in international English.

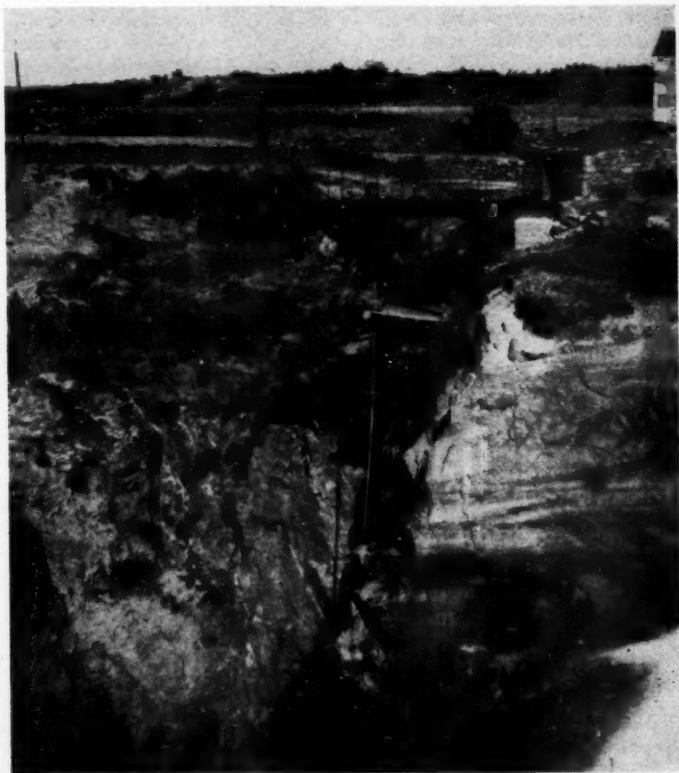
The most famous quartz deposit in Spain is that of Villasbuenas, in the province of Salamanca, which produces yellow quartz with distinct color gradations from champagne yellow through madeira brown to true smoky quartz. The Villasbuenas quartz stockwork is contained in granite and decomposed gneiss. The original working consists of an enormous glory hole, approximately 50 meters in diameter and 50 deep, of roughly circular shape. From the middle depth to the bottom of this pit, galleries have been excavated in all directions, following the quartz veins.

A short time ago this mine was flooded, but redevelopment work has now progressed to the point where shipments

of colored quartz have been made; and it is certain that within a short time the long known topazes of Villasbuenas, which were greatly valued in past years, will again be regularly shipped to market.

SCHEELITE

Scheelite and Wolframite are found in many parts of Spain, and the formations which contain them are very extensive. They begin in the Galician provinces in the northwest of Spain, extend southward along the Portuguese frontier; and into the southern provinces of Estremadura. Laterally, the formations extend eastward toward the center of the Iberian Peninsula, as far as the province of Cordoba.



The Spanish citrine quartz mine at Villasbuenas, Salamanca Province, Spain.

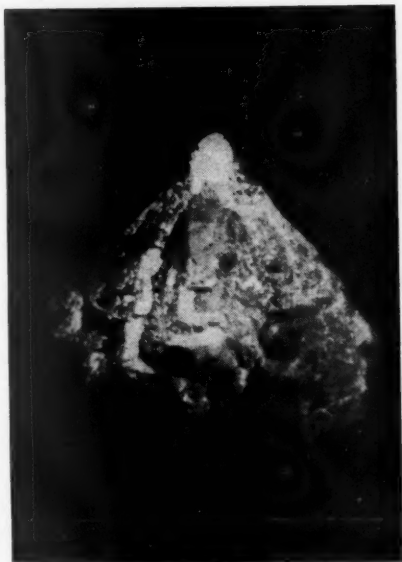


Waste dumps at the Spanish citrine quartz mine at Villasbuenas, Salamanca Province, Spain.

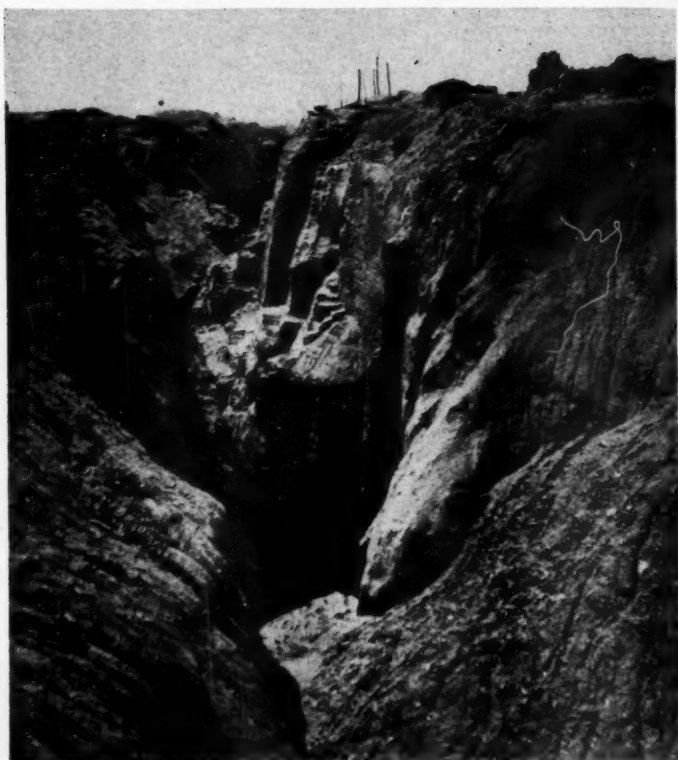
The largest tungsten mine is situated in the district of Barruecopardo, in the province of Salamanca, near Villasbuenas—about $51\frac{1}{2}$ kilometers distant, as the crow flies—and is dominantly a source of Scheelite, although Wolframite and interesting crystals of Reinite are also found there.

The country rock is decomposed granite, which is cut by great veins of quartz and feldspar. Scheelite here is found as beautiful semitransparent honey-colored crystals; and in dark gray to black crystalline masses, having a vitreous to sub-metallic luster.

The miners call the honey-colored crystals *caramels* ("caramelos"), and the gray to black stones *dandruff* ("casposas"). In this deposit, the clear honey-colored crystals are rather scarce, but the opaque and gray stones are more plentiful. All are quite well formed, but none are quite as good as the best from the mineral district of Ponferrada, in the province of Leon.



Scheelite crystal (natural size) from Ponferrada, Leon Province, Spain.



The largest Spanish scheelite (tungsten) mine at Barruecopardo, Salamanca Province, Spain.

Good specimens of arsenopyrite can be found in the quartz of this formation. Rarely, specimens of arsenopyrite in quartz, twinned in cruciform, have been found.

At present, this lode is being actively worked by two mines—the "Coto Minero de Barruecopardo" and the "Mina Maria de los Angeles"—which have an annual production of more than 400 metric tons (A metric ton is approximately the same as an English long ton, or about 2240 pounds avoirdupois). This can be in-

creased easily.

This group of ore bodies trends roughly North-South, and has a length of several kilometers, from Barruecopardo to the Huebra River, which crosses it almost exactly at right angles.

The major part of the production of the mines of Barruecopardo is exported to the United States, with smaller sales to England and Germany.

(Translated from Spanish by R. L. Ives).

A COLLECTING TRIP IN AUSTRALIA

By KELVIN GREEN

YMCA Edward St., Brisbane, Queens, Australia

I must tell you about our latest expedition! You know, in this country, where I think we have about one mineralogical society, the place of such organisations is taken by the Gemological societies, one to each state. Accordingly it was as a member of one such society that I went on my last mineral and rock hunting trip.

We selected a place not previously worked over by anybody save desultory prospectors in the pretty distant past so the gravel beds of the river we selected were almost untouched. To reach it we ran our cars south of Brisbane to the high, very picturesque volcanic mountains of the McPherson Ranges and then entered the crater of an ancient and very huge volcanic pile, the topmost peaks of which are called "Binna Burra" "Lost World" and similar poetic names. The mountains are covered with tropical rain forests except where the absolutely precipitous sides of rocky mountain wall afford room for nothing above the moss or lichen rank. All else is jungle growth with a most amazing variety of simply gigantic ferns, an absolute fern-lover's paradise. There were also some stinging-nettle trees but the foresters had cut down all branches likely to be brushed against by human beings and labelled them for the outlaws they were.

The river we followed through the crater-valley is the Nerang, the typical "Wild, dashing river" you read about. There were some large fish in it and also a pearl-bearing bivalve. This latter grows to about the same length as the *Quadrula* *Heros* of the Mississippi but not the same breadth.

At our first gravel we all hopped out of the cars for an eager look-see and almost at once I found a small carnelian and then a big boulder of volcanic breccia, very handsome but too porous to polish, so we all took stock and considered. Should we stay here or go right on? With a twinge of conscience we decided to go right on.

Well, you see, the place was, as I said, decidedly picturesque. The road wound on up out of the valley into some simply breath-taking views of those same mountain walls worthy of any man's camera. True! A gentleman from your near neighbourhood, a much travelled chap, thought it good enough to get his camera busy there when I took him along a week later, anyway! And our lot, having been assured there was something good to be found in the river gravels, decided it would keep while they ran up that mountain path. It led past a very scenic feature—a natural arch of volcanic rock closely neighboured by a sixty-foot-high waterfall, right in the heart of a part of the rain forest. So off we all went!

I toddled along with the rest and the winding road very soon made me car-sick but I just hung on and said nuffin. 'Twas worth it.

Arrived at the gate of the tiny enclosure the foresters had made around the area of the waterfall the first thing I found was a giant earthworm. It was only a little fellow about a foot long and a car had run over one end of it but there it was! Try a visit to a tropical rain forest one day. You'll get fun. Most of the small fry ran down the various paths the foresters had cut into the river's little gorge slopes but others of us proceeded more carefully. The ground was clayey, the steps of stone covered with wet mosses and the whole place was as slippery as ice! I soon heard the geologist's picks at work on rocks down by the river where I'll wager my boots the sound had never been heard before and when I arrived I found two lads, one an Aussie and one a Yank from Oklahoma, had located a whopping big chunk of chalcedony set solidly in a crevice in massive volcanic rock. They couldn't have shifted it out entire without mining drills and dynamite so broke off a piece weighing about half a pound and left the rest for some other time. I went along a little way and found

a big pale-blue mountain lobster snapping white claws at me. The two lads joined me and we chivvied the big fellow but as we had plenty of tucker we left him, only getting some fun out of making him snap those big white claws. He was about a foot long. I found him climbing over the rocks out of the water, not swimming as a self-respecting lobster should swim, but nothing in a rain forest is as it should be.

After about an hour we decided we'd had it so started off back to the river gravels and lunch. A crew had started the billy boiling there and cakes and scones were well to the fore. About twenty dozen kids brought pieces of rock to me to ask if it was chalcedony but once they got the right idea they didn't miss a point. It was all over the place, pieces small and large and in some cases exactly as the volcanic steams had left it, filling some cavity in the rock, only the rock had perished from around it. One chap found a chunk of carnelian of about the size and shape of Grandpop's watch fob and asked me what it was. I told him. Fool of me, I know, but sometimes we are honest by accident. Another fossicker found a piece of chalcedony of a pale blue tint. There were some very pretty pieces of obsidian around the place, too. Also a red jasper of a different kind of red, if you understand me. I'm thinking the colour was not due to iron but more likely due to manganese. These volcanic jaspers are formed by a different process from those found on the upturned edges of ferruginous sediments in desert country, I feel lost trying to explain them.

A couple of old prospectors with the party quickly saw the high signs of gold in some pieces of quartz porphyry that formed water-worn boulders in the gravel beds. So did I. We estimated the gold would very likely be in crevices in the bedrock under the water of the river. Sometime, maybe, we'll look into that!

Above our heads the clouds were drifting against the cliff faces, dispersing through the rain forests and assembling again over the tops of the mountains in a most spectacular manner. Fortunately

for us we got none of the rain down in the valley. Here, where once had been a seething inferno of molten rock, cows were quietly grazing, belly deep in lush grass. One old dear refused us right of way. Just stood there chewing cud and wouldn't budge! We pushed our car right up against her but she stayed put, so I put my hand out through the car window, slapped her and said "Go on! Giddap!" She goddap. Up along one of the mountain paths we had lunch at a tea room run by a German migrant. He had some whopping big chunks of chalcedony, pounds in weight. Also a lump of carnelian. He said his brother got them while quarrying nearby. The rock was resiliified on the surface, it appeared, but soft inside and when you belted it with a sledge hammer it came apart, revealing at times the gem material within. The brother was actually mining perlite, of which he gave us some very good samples. This volcanic material has recently come into use for some purpose in the plastics industry. Referring to the rain, we asked if he'd had much lately. He said they'd had seventy inches from Xmas to Easter and were pretty browned off about it! The place looked like it. There were pretty little cascades running down the sheer precipice faces in almost any direction you liked to look. Hundreds of feet in places. Now and again you could see quite interesting caves in the lava flows but for the most part the lavas had formed columnar structure. They went through the whole gamut from ultra-basic to white acidic material. It seems the volcano was once very high, some said seventeen thousand feet, but nobody had given it radio-activity tests yet so nobody knew its geologic age. The rocks we saw were naturally nearer the foundation of the immense pile but a lot of decomposed material must have gone down to the sea and helped make up those Tallebudgera sands of which I sent you a sample. More particularly the ilmenite and magnetite, I suppose.

The cows were Jersey cows, by the way. We had whipped cream with lunch but

(Continued on page 625)

THE SPECIAL METALS AND RARE EARTHS

Presentation of Eugene B. Hotchkiss
Vice President, Vitro Corporation of America
before the American Mining Congress
1956 Mining Show, Los Angeles, California
Thursday, October 4, 1956

We quite customarily speak of these substances—which I shall call simply the rare metals—as though they belonged together by virtue of similar characteristics or properties. Even an inference of uniformity is hardly excusable in this age of scientific exactness, for individually the rare metals have very little in common. They aren't even all "rare." They differ widely in the prevalence in which they occur in nature. Some, common in other parts of the world, are promoted to the rare category in our country, mainly because of their strategic importance. Their value per pound ranges from cheap to very expensive; some rare metals are produced on a large scale, others by the gram. To further compound the confusion of nomenclature, we include in this group the metalloids, with properties somewhere between those of a true metal and a non-metal, the rare earths, which are neither truly rare nor are they earths, and those new manmade elements that are produced by nuclear reaction and the trans-uranics.

Perhaps some justification for this blanket classification may be found in their very diversity; perhaps more in our attitude toward them that sees unmeasured potentialities in their future. A kinship of fascinating dissimilarity bonds these unusual metals together. In common, they stimulate our technical curiosity in the search for newer and better materials. Collectively, they represent the promise of the future in the metals industry.

Therefore, I propose that we borrow a term of scientific distinction used to designate other congeries of diverse talents, and call this group hereafter the College of Rare Metals, and I nominate for membership the following:

Beryllium, Bismuth, Boron, Cadmium, Cesium.

The Alkali Earth Metals: Calcium, Barium, Strontium.

Cobalt, Columbium, Gallium, Germanium, Hafnium, Indium, Lithium, Manganese, Molybdenum, Nickel.

The Platinum Group: Iridium, Osmium, Rhenium, Palladium, Platinum, Rhodium, Ruthenium.

Rhenium, Rubidium, Scandium, Selenium, Silicon, Tantalum, Tellurium, Thallium, Thorium, Tungsten, Vanadium, Yttrium, Zirconium.

The 15 Rare Earth Metals, The Man-Made Metals: Francium, Promethium, Astatine, Technetium.

The Trans-Uranics: Americium, Berkelium, Californium, Curium, Neptunium, Plutonium, Einsteinium, Fermium, Mendelevium.

References:

Rare Metals Hand Book—Hampel—Reinhold Pub. Co.

Mineral Facts and Problems—Bull. 556—US Bureau of Mines.

The Chemical Elements—Chen Chart Pub. 1954.

Reactor Hand Book—Vol. 3, Sec. 1—USAEC 1955.

Atomic Industrial Forum Publications.

I will not ask that these nominations be seconded, neither will I request that the nominations be closed, and I hasten to add that this selection of some 65 of the 101 presently identified elements in the periodic table has not been passed upon, or approved by any committee. It is my own selection and admittedly arbitrary.

Let us briefly examine some of these so-called rare metals.

In prevalence, silicon, second only to oxygen as the most abundant element, makes up some 28% of the earth's crust. But pure silicon is produced at the rate of only a few thousand pounds per year. The rare metal, tungsten, is about as abundant as copper. There is almost twice as much zirconium in the earth's crust as zinc, and one is amazed to find rubidium, 16th in order of prevalence, almost as abundant as chlorine, but with a total annual production of only about 100 pounds.

On the lower end of the prevalence scale, thallium occurs in the lithosphere to the extent of about 30 grams per ton, and although it is more abundant than arsenic, antimony, or mercury, its wide distribution does not represent its availability. Rhenium, occurring in the earth's crust to the extent of only one thousandth of a gram per ton, is indeed rare, while the manmade metals like promethium, produced only by nuclear reaction, do not occur in nature at all.

In physical properties there are also some striking differences. Thallium is so soft it can be easily scratched with the fingernail. Gallium will literally melt in your mouth, going into its liquid phase at some 13° F. below normal body temperature. At the other end of this scale stands osmium, the hardest of all metals, and tungsten having the highest melting point, 6152° F.

The electrical properties of the rare metals are equally interesting. Boron, a feeble conductor at room temperature, becomes quite conductive at high temperatures. Vitreous selenium is a dielectric, while in one of its other allotropic forms it is a good conductor. Germanium owes its important use in transistors to the fact that it is a semi-conductor, and recent reports indicate lanthanum, one of the rare earths, is a super-conductor.

Variations in age are notable, too. The mineral, beryl, was mined as a gem in Egypt five thousand years ago, but the

metal beryllium, the lightest stable metal with a high melting point, was not known until late in the nineteenth century. Osmium, the heaviest of all metals, was found in the native state with others of the platinum group in precious metal brought back by the Conquistadores in the mid-fifteen hundreds. Mendelevium, first produced a little over a year ago, certainly qualifies as the youngest rare metal, but its half life is so short that it will undoubtedly pose some unique membership problems in the College of Rare Metals.

In the interests of brevity I shall not even attempt to catalogue the infinite variety of their chemical properties or their nuclear behavior.

These, then, are our rare metals. We have mentioned only a few and our examples were selected primarily to illustrate diverse and unusual properties. Old or new, rare in occurrence or rare in use, hard, soft, reactive, or passive, they represent a most unusual collection of substances, richly deserving the distinction and honor of membership in the College of Rare Metals.

But fascinating as they are as rare metals, the future promise of those we can coax out of their obscurity into the profitable service of mankind commands a much more practical interest. It is as *common*, rather than *rare*, metals that they will spark the new industries of tomorrow. Can we determine the factors that are significant in their transition from rarity to availability? Can a pattern be detected in the transition of recently available but once rare metals such as aluminum, magnesium, or titanium that might help us to predict when and how others might join these illustrious alumni of the College of Rare Metals?

We can list several factors that were significant in the change of these three light metals from relative obscurity to economic importance:

1. The recognized need for new, strong, lightweight structural metals;

2. The abundance of each of these three in the earth's crust that stimulated a desire to put them to use;

3. The assurance that a large and profitable market awaited the successful solution of the problems of process technology and fabrication.

How did these factors operate in the case of aluminum? About 35 years of research and process development followed the first laboratory production of the pure metal before Hall achieved his technological breakthrough that demonstrated how aluminum could be produced economically. We do not know the cost of this effort, but it is of interest that the research, application engineering, and market development, which followed each other in orderly fashion, were solely the efforts of private risk-taking in an atmosphere of free enterprise and peace.

The story of magnesium differs from that of aluminum. The magnesium industry was a German monopoly imported to this country under the threat of World War I. Judging by U. S. production, which languished around a few hundred tons per year until there was a sharp rise in the early 30's, the problems of process technology were not solved until then. But in magnesium, the factor of need was heavily underscored by wartime strategic requirements, which, heavily backed by federal subsidy, created a tremendous demand before industry was technologically ready to supply it.

The process breakthrough had hardly occurred before the defense program of World War II expanded magnesium production manyfold, from 5300 tons from one plant in 1939 to over 180,000 tons from 15 plants four years later. At the end of the war one plant was again the sole producer. I have been unable to find records of the total federal spending on magnesium, but we may assume that it was substantial.

The titanium industry got off to an even faster start than magnesium in another period of emergency, and under

the direct initiative of the government. A much more imposing array of government spending programs appeared. Again we see the factor of strategic need for a little known metal causing a crash procurement program well in advance of the process breakthrough that normally signals the start of a new extractive industry. It is estimated that the total cost of this program to the government, including government-financed research in processing and production, plant loans, the maintenance of production aids, together with G.S.A. stockpile purchases, totaled somewhere around 175 million dollars.

As far as a pattern is concerned, we can note that in each of these examples, the difficulty of extracting the metal from its ore, or source, and in fabricating it into useful forms, disputed the promise of its prevalence in nature. And in each case, a costly, arduous, and long research program had to be successfully completed before the metal became an article of commerce.

By no means should we deprecate the widespread industrially-sponsored activity that took place concurrently, nor can we deny that our economy will be enriched by the availability of this new light metal much sooner than would have been the case without vast government support. But in the case of magnesium and titanium we might raise the question whether the development of our newer metal industries must of necessity occur in an atmosphere of national urgency and be dedicated first to the destructive arts of war.

We can look at some other examples. Without doubt the history of uranium illustrates the ultimate effect of the forces of extreme national urgency, brought on by world war and continued by an unsettled peace. Never before has our national security been so thoroughly tied to a single metal, which a short decade and a half ago was known as a little wanted by-product of radium refining. The immense problems of scarcity, lack of basic knowledge of its properties, and the gravest question of all—whether its

predicted behavior could be safely demonstrated and controlled—were far beyond the capabilities of private enterprise to handle.

Under a time schedule that appeared impossible, and the necessity of the most stringent security controls, there was no other way of creating this industry except as a ward of the government. The cost, exclusive of weapons development and production, has been estimated to be in the neighborhood of 14 billions of dollars—the cost of 80 titanium programs.

We may hope that this example does not indicate a pattern to be followed in the case of other rare metals, but it brings home forcibly the vital necessity, as well as the immense cost, of the research, process engineering and solving of many complex metallurgical, chemical, and fabrication problems that were involved in the development of this new metal industry.

Molybdenum is one of the relatively few new rare metals, now established as an industry, in which private initiative in research outpaces federal subsidy. The Bureau of Mines says,—

“At least part of the spectacular growth of the molybdenum industry can be attributed to research sponsored by the producing firms.”

We can cite two more examples: beryllium, where private initiative has been particularly active; and zirconium, where federal leadership is more apparent. In both cases, recent government procurement contracts for many times the present productive capacity of the industries involved, have caused a flurry of competitive bidding and crash development of new processes.

We certainly cannot object to the aspects of competition in technological development, or its effect on prices, and the plans of the zirconium producers and quite possibly those making beryllium, as well, to produce quantities in excess of government requirements, will certainly

advance the industrial importance of these metals. But when a new business, or one about to be vastly expanded, has only one customer, whose requirements are dictated primarily by military considerations, we may ask ourselves again—must the peace-time uses of our new rare metals always be a by-product of their strategic war-time need?

In the present state of international nervousness, it is hard to plan effectively for the less critical times we hope for in the future. We must never forget that industrial strength is our nation's best guarantee of peace and the strongest deterrent to potential aggressors. We should of course continue stockpiling those scarce materials on which our productive capacity depends, and intensify the search in our own country for the minerals we might not be able to obtain from abroad in time of war. In fact, further progress in all of the technologies that might make us invincible in war is vital.

But neither should we forget that many of these same objectives can also be accomplished by research and development dedicated to the objectives of making available more and better goods for a higher standard of peace-time living.

It is here that the rare metals field is particularly and adversely affected. In many cases, our knowledge of their true properties is very limited, and we have had ample demonstration of their resistiveness to extraction by classical processes. In few instances, indeed, is there assurance that a profitable market awaits. To further complicate the situation, the determination of the properties of rare metals depends in general on a much higher state of purity than is the case for the more common ones, and their preparation in anything like a pure form will often depend on the development of special techniques.

This can only be accomplished by long, arduous, and costly research; but it is particularly difficult for the small and medium-sized business enterprises interested in this field to raise the money necessary to carry on such programs.

Banks will not loan the money, the business seldom generates sufficient funds, and risk capital for research is very difficult to obtain. Yet the contribution these small and medium-sized businesses can make to our national economy depends as much on this financial backing as it does on the imagination and perseverance of those leading the research.

Our experience at Vitro has taught us there is no short cut to a bonanza in this field. At what is now our Rare Metals Division, we produced the first gram of radium refined in this country, nearly 25 years ago. We have been active since 1942 in the emergency transition of uranium from rarity to relative abundance. More recently we have extended our in-

terest to other rare metals, and the rare earths.

The reasons why we are increasingly active in this field, despite the hazards, the difficulties, and the problems I have cited—that particularly affect a medium-sized company like Vitro—are these. We have seen in the past 20 years a phenomenal increase in the knowledge of the physical sciences, and their industrial application. We expect this trend to accelerate in the future. The opportunity of sharing in the direction of this increasing force of technology, in attacking the immense undeveloped wealth of rare metal resources in our land, and in the seas that wash our shores—this opportunity is to us a fascinating challenge.

INFORMATION WANTED BY READERS

I wish to have a thorough quantitative assay performed on some ore. Whom shall I contact?

F. Wendt
Troy, N. H.

Oct. 23, 1956

Ans.—United States Testing Company, Inc., Dept. P, 1410 Park Avenue, Hoboken, N. J., and Lucius Pitkin, Inc., 47 Fulton St., New York, N. Y., are two good laboratories.

Roy Brayley dies in Canada

Editor R&M:

I have just lost a very good friend who was also a subscriber for R&M—I am referring to Roy Brayley of Peterborough, Ontario, Canada, who passed away on October 28th, 1956.

Another friend, Garnet Burns, also of Peterborough, passed away in July. I think Garnet was also a subscriber for R&M but am not sure. H was a very special friend of Roy's and was the man who staked the well-known Center Lake Uranium Mine at Bancroft, Ontario.

Mrs. Brayley has just written to me to say that due to the advertisement Roy had in R&M, she is swamped with requests for specimens and is unable to do anything about it. Hope you can catch the printer in time to stop the ad in the Nov-Dec issue, it might help.

John W. Edwardn,
Wyebridge, Ont., Canada.

Nov. 10, 1956

Yes, the ad has been stopped. We trust that Mr. Brayley's many friends may spot this letter and join the Editor in mourning the passing of a good friend.

Paul Armstrong dies in Florida

Editor R&M:

Meant to write you sooner to tell you of Paul's passing. We had returned from a wonderful trip to North Carolina when with no warning or previous illness his heart gave way and he was gone before we realized it. He was only 51 and had a coronary occlusion.

Would you please print this letter so his many rock friends will know of his passing—I just can't write them all and he was so fond of them. He passed away April 25th.

I am renewing our subscription (please note address change). It is one bright spot in my life now—your magazine.

Mrs. Paul Armstrong,
305—28th St., South,
St. Petersburg, Fla.

Nov. 8, 1956

Tilly Foster Mine dumps being carted away!

Editor R&M:

A power shovel is cutting deep into the dump at the old Tilly Foster iron mine, Tilly Foster, Putnam Co., N. Y.

Frank Chambers,
1803 Pitman Ave.,
Bronx, N. Y.

Sept. 20, 1956.

Editor's note. We hope the shovel doesn't take away all of the dump at this old abandoned but still famous iron mine. What a calamity it would be to collectors if the dumps were to be carted away, the terrain graded and built upon. Let us hope and pray that the shovel digs out some of the worthless rock and leave behind the fat mineral dumps!



WORLD NEWS

ON Mineral Occurrences

ITEMS ON NEW FINDS ARE DESIRED
PLEASE SEND THEM IN.

ALABAMA—Fine xls of corundum have been found near Hanover in Coosa Co., Ala.

ARIZONA—"During a recent visit to the Chericahua Mountains I found some black crystals that checks out for andalusite in schist, but it is black and all the books I have on minerals don't list andalusite that is black. I just thought this might be an oddity. This material comes from the Cross Spear Mountain and is just east of the Cross Spear Ranch owned by Stark Riggs. This place is about 15 miles south of Dos Cabezas, Arizona. Am mailing you a specimen of the material, marked #1.

"Also on the same trip I found some wollastonite crystals on the side of the road in Apache Pass between Bowie, Ariz., and Dos Cabezas, Ariz., about 16 miles from Bowie. This appears to be good collector's material. I am sending you a sample, marked #2. It is found on the east side of Apache Pass almost to the San Simon Valley."—letter dated Sept. 2, 1956, from John A. Morrow, P.O. Box 562, San Manuel, Ariz.

Specimen #1 turned out to be not andalusite but staurolite which occurs as dark brown xls in grayish schist. Specimen #2 is not wollastonite but calcite—group of colorless, coarse fibrous xls.

Both specimens are of good quality and both localities are in Cochise Co., Ariz.

ARKANSAS—From a hillside located in W $\frac{1}{2}$ NW $\frac{1}{4}$ Section 7, T.1, R.19W of Garland County, Ark., some fine quartz xls containing chlorite phantoms have been obtained by Captain George W. Owens, our Amateur Lapidary Conductor. One xl was sent us—a small, slender, doubly terminated transparent rock xl

containing a green chlorite phantom—very, very, nice.

In the March-April 1956 R & M, p. 246, mention was made of a large diamond being found March 4, 1956, at the Crater of Diamonds, near Murfreesboro, Pike Co., Ark. The Crater of Diamonds is an abandoned diamond mine (the only diamond mine in the U.S.) that has been opened up as a tourist attraction.

We have a letter from Mrs. Howard A. Millar, whose husband is Manager of Crater of Diamonds, dated Sept 24, 1956, commenting on the huge diamond, which has been cut and given the name "Star of Arkansas." The finder of this diamond was Mrs. A. L. Parker of Dallas, Texas. The letter reads as follows:

"I am enclosing copies of articles appearing in the Dallas, Texas paper concerning the "Star of Arkansas." This diamond has been appraised as high as \$100,000.00 by the diamond experts of Evert's Jewelers of Dallas. The "Star" is on exhibit at their place until after the Dallas Fair, around the first week in October I believe. "Mr. Millar and Mr. Harold Branch of Schenck and Van Haelen cutting firm of 56 West 45th. St. New York, New York who had charge of the cutting of this fabulous gem were the speakers at the first meeting of the Dallas Gem and Mineral Club. I am enclosing the by-laws of the Club, this being the first meeting. "Mr. Branch tells us that in the study of this diamond at Columbia they have learned much of the structure and the stress and strain under which a diamond is formed, much more than has been known heretofore. He also told us that this is by far the hardest diamond to be cut in America, it is approx. 6 times

harder than the average diamond. Hence it is much more brilliant than the average. It is so brilliant that you can not see the details of the stone under the direct light, to be able to see the table and the general true form you have to actually shade the diamond from the direct light. It, as you will see in the press notices, weighs 8.28 Cts. The size of the diamond in measurements is about the same as the rough. He only lost 1/8 inch in length, and 1/8 in. in width in the cutting. It was a remarkable feat of cutting to say the least.

"We will be glad to cooperate with you in selling the ROCK AND MINERALS here and in taking subscriptions. The Dallas club plans to come here within the next few weeks, and most of the members are new at the game and looking for magazines and books which will aid them. There are about 150 members with only one meeting behind them. I believe we can use 3 or 4 dozen copies at least."

CALIFORNIA—John S. Albanese, P. O. Box 221, Union, N. J., has donated an interesting specimen—a group of small, lustrous, lead-gray stibnite xls on a brownish clayish matrix—yellow cervantite coats both the stibnite and the matrix.

"Stibnite with cervantite, Ambrose mine, Hollister (San Benito Co.), Calif. Collected circa 1900."—on label.

COLORADO—Pale greenish sandstone (vanadiumiferous) occurs at Silverton, San Juan Co., Colo.

CONNECTICUT — The following item, dated July 24, 1956, was sent in by Robert Methot, 5 Sylvandale Rd., Jewett City, Conn.

"Here's an item that might be of interest under "World News in Mineral Occurrences." The other week I took a trip to the famous Strickland Mica Mine in the town of Portland, Conn. on the Connecticut River. The following specimens were found in the largest dump of the locality. *Tourmaline*: some very nice black and green xls. up to 3" were found. *Spodumene*: a pale lilac specimen of the variety kunzite was found. *Fluorite*: a

broken 1/2" xl in a 2" matrix which consisted of minute quartz xls, and yellow cookeite. *Lepidolite*: some choice lavender and rose specimens were found. Some pale lavender sheets 1/2" in length were noted on a specimen of quartz. This noted pegmatite locality, although not being worked anymore is well worth the time and trouble of a visit. I am planning a trip to the Ruggle's Feldspar Mine near Grafton Ctn., New Hampshire."

Mrs. Harriette Schoppee, (9 Greenbrier St., Springfield 8, Mass.) Secretary of the Conn. Valley Mineral Club sent in the following item, dated June 8, 1956:

"Mr. T. Grant Whidden of the Conn. Valley Mineral Club discovered a nice big vein of mountain leather which supplied all trip collectors as well as our local museum. Many large firm pieces were collected. Ooops, almost slipped—it was found at the New England Lime Quarry, Canaan (Litchfield Co.), Conn."

Thank you, Mrs. Schoppee, for this item. Please send us more items on interesting finds. We wish secretaries of other clubs would follow your example and send us similar reports.

DELAWARE—Black pebbles of basanite (quartz) have been found on the south side of Indian River Inlet, Sussex Co., Del., by Mrs. Hazel M. Reynolds, 470 Stockdale Rd., R.D. 2, Glenarm, Md.

FLORIDA—Howard B. Graves, Jr., 826 S. Ingraham Ave., Lakeland, Fla., has sent us some interesting pebbles from southeast of Mulberry, Polk Co., Fla. Some were rough, cellular, smoky gray masses of chalcedony that fl. brown under the long wave. The others were flat milky quartz pebbles.

"Although these are common beach pebbles they do not occur on Florida beaches. These were from a beach of probably Pliocene age."—on label.

GEORGIA—"Am sending you today a specimen of pyrites on lignite wood which I am advertising in the next issue of R & M.

"This is the most spectacular mineral specimen that I have seen from Georgia in many years and is most unusual in occurrence. This material comes from Chattahoochee County near Columbus, Ga. To better preserve the specimen, it would be good to dip or spray it with some clear lacquer or plastic.

"The contrast of the bright pyrites on the brown-black lignite is spectacular, isn't it?"—letter dated Sept. 10, 1956, from Natural Gems, 795 E. Currahee St., Toccoa, Ga. (Bob Daniel, prop.).

A truly handsome specimen was received from Natural Gems. Do hope they have a large supply on hand to supply the many collectors who will want specimens.

IDAHO—Several good topaz xls, colorless and pale yellow, have been found on Camas Creek, Clarke Co., Idaho.

ILLINOIS—Kenneth Vaughn, 311 E. Central Blvd., Kewanee, Ill., has sent in a 1 x 1 inch grayish spiriferoid, a fossil of Mississippian age which he had collected at a strip mine (coal) in Henry Co., Ill. The fossil is very abundant at this strip mine which lies between Annawan and Atkinson on U.S. Route 6 (mine is south of the highway.)

INDIANA—"Am sending you under separate cover some calcite specimens that might be of interest to mention in "World News on Mineral Occurrences."

"The calcite comes from a quarry at Lapel, Madison Co., Indiana, which is about 32 miles N. E. of Indianapolis.

"The catcrite fl. blue and ph. a more spectacular blue under short wave. Some of the calcite will also fl. yellow and red."—letter dated Sept. 25, 1956, from Victor Felger, 126 Esmond St., Fort Wayne, Ind.

A number of specimens were received. One was a loose colorless xl (no fl.); others were colorless cleavages, with a pinkish tint (on gray limestone)—fl. yellow under long wave; another consisted of colorless xline calcite as banded veins in gray limestone—looks nice under long wave as the yellow fl. is in bands.

IOWA—Michael Papcun, RR 1, Melrose, Iowa, sent in a xled, brassy-yellow mass of pyrite on a dark brownish limestone.

"Found at a coal strip mine 2 miles south of Knoxville, Iowa, in Marion County."—on label.

KANSAS—Travertine, a compact variety of limestone, is found around Great Spirit Spring in Mitchell County, Kansas. Here the minerals in the spring water have gradually built a hill of travertine 42 feet high and 300 feet in diameter.

KENTUCKY—"Under separate cover I am sending you a small amount of a substance from a small fault, or crack, in a limestone quarry located in the city limits on the west side of Frankfort (Franklin Co.), Ky. The exposed fault is about six inches wide, the material, when damp, is not so brittle."—letter dated June 7, 1956, from Charles Johnson, 307 W. 4th St., Frankfort, Ky.

The substance is a grayish clay of some kind, with a peculiar sour taste.

LOUISIANA—"I understand that you help many collectors identify rocks that they cannot identify themselves. I am sending you under separate cover a rock that I would greatly appreciate having you identify.

"This rock comes from my dad's gravel pit on the outskirts of Bogalusa (Washington Parish,) La. We call it petrified wasp nest but I would like to know what you think of it."—letter dated Aug. 24, 1956, from Jimmy Henderson, 1345 W. 10th St., Bogalusa, La.

The specimen is a petrified coral—a very nice cream-colored mass. We hope Jimmy will send us another specimen from his father's pit, as we need items from Louisiana for this department.

MAINE—Roy M. Fitts, 39 E. Elm St., Yarmouth, Me. sent in recently two specimens from his state. One was autunite which consisted of greenish scales on a black tourmaline xl (the autunite fl. a

bright green.) The other was a group of black tourmaline xls associated with whitish muscovite.

"These 2 specimens were found on a recent trip to Georgetown (Sagadahoc Co.), Maine."—on label.

MARYLAND—Pink dolomite xls. have been found in limestone at Fountain Rock, Frederick Co., Md.

MASSACHUSETTS—"I would like to inform readers of R & M that the well-known boltonite (fosterite) locality in Bolton (Worcester Co.), Mass., is now closed to collectors. A collector was apparently hurt on the owner's land and the owner does not want to be held liable for any accidents."—letter dated July 27, 1956, from Frank J. Babbín, 7 Florence St., Natick, Mass.

Mr. Babbín sent in a specimen from the locality—colorless hyalite crusts on massive smoky quartz; the hyalite fl. green. In answer to our request for some notes on the famous quarry, here is Mr. Babbín's reply, dated Aug. 5, 1956:

"In answer to your questions on the Boltonite locality in Bolton, Mass., I will try to fill you in on what I know.

"This limestone quarry was worked about 25 years ago and has been abandoned ever since. The surrounding country rock is largely igneous and metamorphic. The quarry is approximately 100 yards in length, 75 yards in width, and 50 feet in depth. Water occupies the center of the quarry while there is approximately a 15 foot level span between the water and the quarry wall itself. The span

circles around two-thirds of the quarry while the other one-third is where the water comes in contact with the wall.

"The natives of Bolton call this the 'Limestone Quarry', and as far as I know this is the only name it has been given. The owner reports that 70 different minerals have come out of this quarry. Boltonite is one of the rarer minerals of which I have only one 2 by 3 inch specimen.

"The following minerals I have personally found at the quarry:

SCAPOLITE—light to dark pink in color.

TREMOLITE—small xls. imbedded in pockets and on quarry wall itself.

SPODUMENE XLS.—in smoky quartz.

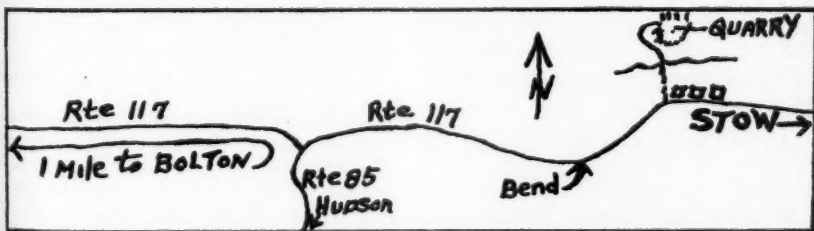
LIMESTONE.

GREEN TINTED LIMESTONE.

HYALITE—encrustations upon smoky quartz. One section of the wall, 3 feet by 4 feet, is encrusted with this brilliantly fluorescent hyalite."

MICHIGAN—The following letter, dated Sept. 1, 1956, comes from D. A. Levick, Jr., 6 Sheldon Close, Mariemont, Cincinnati 27, Ohio:

"For your World News on Mineral Occurrences, I have just returned from a trip through the Copper Country in Michigan and the district just east of Sault Ste Marie in Ontario, and can report the following:



Boltonite locality at Bolton, Worcester Co., Mass. One-half mile down road and after bend in road there are three or four houses in a row. The people in the first house have ownership of the quarry. The quarry is approx. 200 yards from route 117.

"Michigan-Algomah Mines (the 'h' on Algomah is correct in this case) is mining tenorite about five miles generally S.E. of Mass, (Ontonagon Co.), Michigan. Ask in Mass to get started, later turns are marked; the road is poor near the mine, but passable. Blue and green chrysocolla occurs in veins and masses with the tenorite and with a reddish lava (?) waste rock, but, I am informed, the chrysocolla isn't cuttable. The specimens are attractive however, even though most of the tenorite on the dump is rocky. The mine foreman gave me a 3x4 of practically pure black tenorite with a few veins and masses of chrysocolla that is strictly handsome."

MINNESOTA—From a gravel pit at Hopkins, (Hennepin Co.), Minn., we have an interesting limonite concretion (dark brown limonite enclosing light brown clay) that was collected by Adolph A. Sidla, 201-15th Ave., N., Hopkins, Minn.

MISSISSIPPI—Near Eastport Landing on the Tennessee River in Tishomongo Co., Miss., is a deposit of white, very finely pulverulent silica, or tripoli. The deposits are 16 to 20 ft. thick and seem to underlie a considerable area in the vicinity of the Tennessee River.

At a point about 3 miles south of Eastport a mine was formerly opened into this material near Bear Creek. The old mine tunnels may still be seen running several hundred feet into the hills and looking like tunnels in a snow bank—the walls, floor, and roof are so white. The material is so firm that the walls of the tunnel have never caved, though the mine was not timbered. The material was mined and put on the market as an abrasive.

MISSOURI—"Red jasper pebbles can be found at Rockwood Reservation in St. Louis Co., Mo."—Card dated June 26, 1956, from Robert Kissick, 7140 Theodore Pl., St. Louis 20, Mo.

MONTANA—John S. Albanese, P.O. Box 221, Union, N. J., donated a smoky

quartz xl containing black tourmaline inclusions. The xl is deep black in color, due to the black tourmaline, and comes from the noted Little Pipestone District, of Jefferson Co., Mont.

NEBRASKA—Small, gray botryoidal masses of chalcedony have been found in cavities of black opalized wood that was sent in by Mrs. Edwin P. Olson, Box 425, Beresford, S. D. The locality for the specimen is Anoka, Boyd Co., Nebr.

NEVADA—Delicate hair-like lead-gray xls of stibnite are occasionally found on the edges of hot pools at Steamboat Springs, Washoe Co., Nev.

NEW HAMPSHIRE—"Enclosed is a New Hampshire brown beryl xl. I would like to know if brown beryl is unusual or common in the New England States.

"The xl comes from the Beryl Mountain Mine on Beryl Mountain, South Acworth, Sullivan Co., N. H. After digging over 5 hours in the dumps, my brother and I found about two pounds of this brown beryl with a few crystals.

"Slocum's quarry in Connecticut and this mine are the only localities I ever heard of that had brown beryl."—letter dated Sept. 10, 1956, from Harvey Bailey, West Hartland, Conn.

The specimen sent is a 1xl section of a brown beryl xl, gemmy in spots. It is a nice specimen. Brown beryl is unusual in New England, the only locality known to us, aside from Beryl Mountain, is Slocum's quarry at East Hampton, Conn. At Slocum's quarry the beryl is all brown in color and some very fine gem quality xls have been found.

NEW JERSEY—Very fine colorless needles of natrolite in greenish traprock (basalt coated by greenish chlorite) was sent us by John S. Albanese, P.O. Box 221, Union, N. J. The specimen comes from an old traprock quarry south of Bernardsville, Somerset Co., N. J.

"Fine micromount material"—on label.

NEW MEXICO—Pink to brown crested xl groups of barite occur in the lead-silver-zinc mines at Kelly, Socorro Co., N. Mex.

NEW YORK—The following item, dated Aug. 22, 1956, comes from David J. Brison, 7 Elm Lane, Bronxville, N. Y.

"I was up to my cousin's farm in Butler Center, Wayne Co., N. Y., and collected some very interesting geological specimens. His farm is just south of Wolcott and not far from N. Y. 414.

"I am sending a few examples of the specimens I found for you to see and keep. The first ones are claystone concretions, which were found in an irrigation ditch and were rather plentiful in one section there. They occurred in all different shapes; some were flat, others round balls joined together, and still others had holes running through the middle of the balls, which suggest that the concretions had formed around a stick or some similar foreign object. Also enclosed is a photo showing a few that I collected in the clay where they were imbedded. (Photo not clear enough to print.)

"The other specimen is of fossil crinoids and brachiopods on dark gray limestone of the late Paleozoic age. I understand that these fossils are quite common in this part of the state though. I found a few very nice specimens with this one in the same ditch further on from where the concretions were located.

"The last time I went back to look for more concretions the terrain and water level in the ditch had changed, and, I am sorry to say, I wasn't able to find even one."

The claystone concretions are dark gray in color and of odd shapes, approximately 1x1 inch in size—but very interesting.

The limestone is a dark gray, xline specimen, full of fossils—also very interesting.

NORTH CAROLINA—John Hood Summey, 712 Carolina Ave., Gastonia, N. C., sent us a clipping from the *Charlotte Observer* relative to the old Phoenix gold mine located about 6 miles S.E. of Concord, Cabarrus Co., N. C. The main 600-foot shaft has been pumped free of water and officials of the prospecting company report finding "highly encouraging" traces of scheelite, an ore of tungsten. If scheelite can be found in quantity, the old mine may rise to prominence again, this time as a producer of tungsten.

NORTH DAKOTA—Mrs. Ed. P. Olson, Box 425, Beresford, S. D., sent us a specimen of petrified wood that she had collected at Dickinson, Stark Co., N. D. The specimen is a brown mass with a rough exterior.

OHIO—A dark brown marcasite nodule has been sent us by Thomas W. James, 923-32nd St., Parkersburg, W. Va.

"Found in Raccoon Creek, Newark (Licking Co.), Ohio."—on label.

OKLAHOMA—"Under separate cover I'm sending you an assortment of brown selenite xls found in the Glass Mountains of Major Co., Okla. They get their color from the brown clay in which they form. They make fine thumbnail specimens as most of them are that size. Large xls are crude and not so well formed. They occur as singles, twins, penetrations and clusters."—letter dated July 7, 1956, from Marie Kennedy, 737 West Kansas, Blackwell, Okla.

The xls received are very, very nice—they are loose and in groups, all of a brownish color.

OREGON—Interesting specimens of translucent, smoky gray fortification agate, some enclosing black manganese spots (moss agate) have been found near Grants Pass, Josephine Co., Oregon.

PENNSYLVANIA—"I am sending you under separate cover a specimen picked up near Carbondale (Lackawanna Co.), Pa., apparently on a small dump

from the coal mining activities. This dump was not near any surface excavations."—letter dated Aug. 24, 1956, from P. D. McFarland, 206 N. Abington Road, Clarks Green, Pa.

The specimen contained yellow-brown, curved ankerite xls (drusy ankerite) on dark gray slate; tiny rock xls on ankerite; also deep red (almost black) sphalerite xls on the ankerite.

RHODE ISLAND—In 1825 Professor Benjamin Silliman of Yale University acknowledged receipt of an amethyst from Bristol (Bristol Co.), R. I., which he had cut into a "bosom pin" for Mrs. Silliman. Professor Silliman stated that the Bristol amethyst would compare favorably with the finest European amethyst. At present only milky quartz and a few fragments of faintly amethystine quartz can be found at this locality.

SOUTH CAROLINA—Seven miles north of Greer in Greenville Co., S. C., is an old gold mine in which pyrite occurs. A matter of peculiar interest found with the pyrite is this—crystals of pyrite are free of gold, whereas limonite pseudomorph after pyrite showed good gold values.

SOUTH DAKOTA—Mrs. Ed. P. Olson, Box 425, Beresford, S. D., sent us three interesting limonites which she had collected at the Augustina Dam near Hot Springs, Fall River Co., S. D.

One specimen was a brownish, elongated limonite concretion; another was a brownish limonite geode; the last one was a brownish limonite pseudo pyrite.

TENNESSEE—James R. Broyles, P.O. Box 984, Marion, Ind., sent us recently a dark gray fossiliferous limestone—the fossils are small sea shells.

"Found near Rogersville, Hawkins Co., Tenn., by Joe Brooks—also several small snake-like forms, one 18 inch fish, and several small minnows. Joe's address is Tennessee St., Morristown, Tenn."—on label.

TEXAS—"Enclosed is a drill core section of Tannehill oil sand, well No. 2,

Worley, Baylor Co., Texas, drilled by Oakland Oil Corp. of Shreveport, La.

This formation was found from 1260-80 feet.

"I have about 20 of these core sections, comparable to the one sent you, that I'll be happy to pass on to interested collectors."—letter dated Oct. 1, 1956, from Mary Weaver Hunt, Box 399, Holliday, Texas.

The specimen is a fine grained, gray sandstone, $3\frac{1}{2}$ " diam., $1\frac{1}{2}$ " thick.

UTAH—Howard V. Hamilton, 1340 Crandall Ave., Salt Lake City 6, Utah, sent in the following item:

"Groups of unusual quartz crystals coated with black manganese oxides were found in the Deer Trail Mine, Marysville, Piute Co., Utah. Many of the crystals taper sharply toward a single 'triangular' termination—three of the pyramidal faces are prominent and three are very small so the general outline of the termination is a triangle. The above were noted in the collection of Mr. A. A. Brown, 143 N. State St., Salina, Utah."

VERMONT—"I am sending a few specimens which I would like to have identified. They were found in the Connecticut River Valley at East Ryegate (Caledonia Co.), Vt., in stream gravel. We call them Indian beads but believe they are some form of clay concretions. Can you confirm this?

"As you may know, East Ryegate is noted for its glacial varved clay concretions. I have a large supply of these which I would be happy to trade off to other collectors. If any of your readers know of other clay concretion deposits I would like to hear from them.

"You deserve a lot of credit for publishing R & M. I am a subscriber and enjoy all of it, but mostly your readers experiences."—letter dated Aug. 29, 1956, from Miss Linda Hufnagel, East Ryegate, Vt.

The Indian beads are fossil crinoids, small, loose gray specimens; some are

thin sections of a crinoid stem while others are small stems up to 1 inch in length. Each shows a hole in its center, though in some specimens the holes are almost plugged up with sediment.

The varved clay concretions (commonly known as claystone concretions) are very fine specimens of odd shapes—round, elongated, flattened, etc. Color is gray, brown, gray and brown. One resembles a turtle in appearance. Sizes vary from 1" diam. up to 1x3."

VIRGINIA — "Here is an item for World News Column.

"I'm sending you some specimens from the old mica mines at Amelia C. H. (Amelia Co.), Va., that I collected recently. At present these mines are closed but some nice material can still be obtained.

"In addition to the specimens that I am sending you, we also found adularia, beryl, octahedral fluorite (fl), microlite, green muscovite, zinnwaldite and ruby corundum (not of gem grade).

"The prize find was a piece of albite, variety cleavelandite, in large platy xls measuring 5x5x4 inches.

"At a later date I'll send you more items."—letter dated Aug. 6, 1956, from Allison Cusick, RD #1, Unionport, Ohio.

From the Morefield Mine at Amelia C. H. we received 3 specimens—deep green cleavage of amazonstone; a loose purple amethyst xl, and a white, topaz xl (stained brown by iron).

From the Rutherford mine at Amelia C. H. we received 4 specimens—very fine platy, grayish-white cleavelandite, also a nice group of colorless platy cleavelandite xls; a beautiful pinkish gem garnet xl in pegmatite; and a group of whitish muscovite xls in pegmatite.

WASHINGTON — From Spokane, Spokane Co., Wash., we have two specimens that had been sent us by Lt. Wm. L. Hiss when he was stationed in Washington (he is now with the U.S. Army in Europe). The specimens are: *Goe-thite*—black, globular, (pseudo. after *sphaerosiderite*) in cavities of dark gray basalt.

Sphaerosiderite—brownish, globular, in cavities of dark gray basalt.

WEST VIRGINIA—A 3x7 dark gray petrified wood specimen was given us Tuesday, Sept. 11, 1956, by Dale Ingersoll, 2906 Grand Ave., Parkersburg, W. Va., when he and his family paid a visit to the offices of R & M. The specimen was found in a creek bed imbedded in blue clay in the Cabwaylingo State Forest at Dunlow, Wayne Co., W. Va.

WISCONSIN—Meredith A. Frey, Mt. Hope, Wis., sent us a specimen of dark brown, cellular limonite in which some tiny grayish chalcedony pebbles are imbedded. The specimen was found at Seneca, Crawford Co., Wis.

WYOMING—Interesting specimens of green serpentine with narrow traversing black chromite veins have been found at Glenrock, Converse Co., Wyo.

AUSTRALIA—"I have been very busy lately. Just after my university examination I went to Broken Hill, N.S.W., Australia, and around the 'oxide zone' dumps, cuprite and iodyrite have been found again. The cuprite occurred as minute xls and massive, many of them are ruby copper. They are all translucent. Iodyrite is one of the common minerals of the Hill but rarely found as good xlied specimens. This time I broke open a big boulder and found a vug with iodyrite xls. Crystals of rhodinite are very rare but I was very lucky to get a good terminated xl.

"After my trip to Broken Hill I went to the New England District, N.S.W., to do some collecting.

"I have collected many specimens such as safforite, biotite xls, bismuth, etc., but the most interesting one is beryl which Mr. A. H. Chapman (our most well-known collector) and I have found. We found a clay band full of loose gem quality, terminated beryl xls. Many of the xls were broken, due to earth's movement. The color varies from light green to colorless. We have collected nearly 30 xls, the biggest one is about

1x2". This beryl locality is the Heffenin Wolfram Mine, Torrington District, N.S.W."—letter dated Jan. 10, 1956 from R. C. H. Doo, 74 Day Street, Drummoyne, Sydney, Australia.

AUSTRIA—Klaus H. Albrecht, Forge Road, Westport, Mass., personally collected the following minerals:

Large black magnetite, single xls, dodecahedrons (garnet form) together with green apatite and both embedded in mountain leather found in the Stubach Valley, Salzburg, Austria. They are found at the bottom of cliffs (having fallen down from above). Green calcite (some pale and some deep green) and green xline olivine occur with the magnetite and apatite in the mountain leather.

CANADA — The following letter, dated Sept. 1, 1956, comes from D. A. Levick, Jr., 6 Sheldon Close, Mariemont, Cincinnati 27, Ohio.

"(1). Jardun Mines Ltd. is actively working a lead-zinc operation, both underground and by surface trenching about 9 miles north of Garden River, east of the Soo in Ontario, Canada. Galena, sphalerite, chalcopryite, and pyrite occur as masses in granite, apparently along a granite-diorite contact. I also picked up a small mass of chlorite-coated quartz crystals and some small pyrite crystals on white quartz crystals, but most of the material is massive. This is a remote spot, and surface blasting is going on; securing permission to approach and compliance with instructions should be rigorously followed. The old Victoria mine (abandoned) adjoins.

"(2). 'Arctic pudding stones' (conglomerate boulders consisting of red jasper pebbles in a white quartzite matrix) occur in abundance on boulder beaches along the Northeast and East shores of St. Joseph Island, in sizes up to three feet in diameter. The source of the material may well be an area North of Thessalon on the mainland where the conglomerate (which I understand is a phase of the Lorain quartz-

ite of the Bruce Series) outcrops. Since most of the shoreline of St. Joseph Island that is accessible by car is in private summer residence, permission to collect should be secured. A round trip of thirty to thirty-five miles on gravel roads on the island is involved from the point at which the mainland ferry docks."

COLOMBIA—From Barranquilla, a busy city of some 65,000 inhabitants on the left bank of the Magdalena River in northern Colombia, we have a calcified coral (a white mass with a brownish tinge). The specimen was sent us by W. T. P. O'Gara, Dept. Exploration, International Pet. Co., Ltd., Edificio Colombiana De Sequeros, Bogota, Colombia.

ENGLAND—"Enclosed is a small stone from the beach at Camber, England. This stone has a hole through it which was drilled (strange as it may seem) by tiny grains of sand whirled in the currents of the breakers, which caught in some original tiny irregularity on the surface of the pebble and enlarged this until a grain of sand lodged in the larger crack. The fine sand then would whirl around the grain and slowly drill a hole all the way through the stone—similarly the small holes were enlarged by the action of the fine sand whirled in eddy currents. I have specimens in every stage of this process but the 'completed' ones are the most striking."—letter dated June 19, 1956, from Edward Rushton, 730 Bexley Road, West Lafayette, Ind.

A brownish cherty pebble with a $\frac{1}{4}$ " hole through it, was received. Very interesting. Camber (Sussex) is on the English Channel.

ICELAND—"I have a group of specimens of gamma-sulfur that I found in Krisuvik, Iceland. These have been positively identified by the Geology Dept. of Purdue University. This should, I believe, be the third world occurrence for this rather rare allotrope of sulfur. (Sorry I can't send you a piece but this is from a hot spring deposit and is extremely fragile)."—letter dated June 19, 1956,

from Edward Rushton, 730 Bexley Road, West Lafayette, Ind.

NIGERIA—Minerals & Gems, P.O. Box 8072, Albany, N. Y., have donated a group of small, black lustrous cassiterite xls whose locality is Duchin Shetu, Nigeria, Africa.

NORWAY—John S. Albanese, P.O. Box 221, Union, N. J., sent in a loose, white apatite xl whose locality is Oxoikollen, Snarum, Norway.

SCOTLAND—"Our holiday this year was a complete failure from all viewpoints. Our ancient and decrepit car broke down before we started and we were unable to get it repaired in time, so we did most of our trips by bus. We could not stop at the few interesting spots from a geological point of view, nor was the weather too good for us, consequently I have nothing much to report to you.

"We did make a pilgrimage to the very humble abode where Hugh Miller was born ('Footprints of the Creator', etc.) and I picked up some sand from a spot near his house. You will have received this by now, but we missed the tourmaline vein in Glen Affric, and the real garnet sites. There are miles of very fine grained mica schist along these bus runs, but only microscopic garnets are found there, the contacts are where the best specimens are found, but we never managed to hit these places on our bus runs.

"Hugh McCallum took a trip up to Brora in Sutherlandshire (Scotland) to pan gold. He did get a little here in one of the burns (streams) but his ambition to make a piece of jewelry with real Scottish gold and real Scottish gems will not be realized for a long time, if he has to depend on panning at this one spot. It takes long and laborious efforts to gain just a little gold here. All who know where gold is to be found, keep quiet about their particular localities.

"Am enclosing a photo of Archie Forrest with an agate, or rather parts of an agate, that was found near the fish-

ing village of Dunure, Ayrshire, Scotland. One piece has considerable quartz in it but the other has some nice agate that looks as if it would polish well... unfortunately he had given the agates away to two museums before I could detach a piece from one.

"Still get rockhounds coming in with my name and address clipped from **ROCKS AND MINERALS**. They have just about cleaned me out of my private collection of Scottish minerals, and I'm finding it very difficult to replace the specimens or get more to send to the subscribers of your journal who write me about Scottish material.

"Have had several projects in view but had to abandon them owing to bad weather. We have had practically continuous rain for the last two months, and it's no fun digging for specimens in the mud and rain. Might get around to a trip soon, if so and we get anything decent, I will let you know.

"I see by the latest edition of the **GEMMOLOGIST** that there is a display of



Archie Forrest with the two agates that he had found at Dunure, Ayrshire, Scotland.
Lower specimen weighs 65 lbs.
Upper specimen weighs 53 lbs.

sillimanite on at the Geological Survey museum in South Kensington, England, but I fail to note any mention of the Hells Canyon sillimanite from Idaho, U.S.A. as found and reported by Mr. Blalock, in May-June 1956, R & M. I sent him a couple of bucks that I had and asked him to send me a tumbled gem or two . . . will send a specimen up to Hatton Garden when they arrive from Blalock.

"Have really nothing much of importance to say. Two sands to send you from my friend in New Zealand, one he picked up in Curacao, Dutch West Indies when sailing to New Zealand, and one from New Zealand . . . will get them off soon.

"Do you think that the anorthite in specimens such as I sent you would be acceptable as trading material to my American friends? I didn't think much of it. Ernie wanted me to take a big chunk. I believe there is ample stuff at the locality, a vein of it. It also must have to wait another day as it comes from near Loch Ness—I doubt you must shake your head at our unpronounceable names. I remember my pal saying when we were down in England, 'I'll be glad to get back to places with easy names like Kinloch, Rannoch, Buchaille, Etive, Mohr and the Yetts O' Muckhart---' (a yett is a gate, in this case meaning a pass through the hills)." —letter dated Aug. 31, 1956, from Sandy Ramsay, 1015 Aikenhead Road, Kings Park, Glasgow S4, Scotland.

Yes, Sandy, the specimen sent us is an interesting one and should be well received by American collectors, unless they are very fussy. The specimen is a granite consisting of white, xline anorthite, pale smoky quartz, and black biotite. The locality is near Loch Ness at Drumnadrochit, Inverness-shire, Scotland.

SOUTH WEST AFRICA—The following letter, dated Aug. 22, 1956, comes from G. E. Wepener, Mines Department, Omaruru, South West Africa.

"South West Africa is one of the few countries that still has geologically untouched areas and where many a rock hound has made a fortune and where, no doubt, many fortunes are still to be made. The collector or amateur geologist or rock hound, whatever you wish to call him, has in this sparsely populated country many exciting experiences other than the interesting finds of rocks. He has to be careful not to get lost in vast uninhabited areas where his chances of being found are very slender, he is to be on his guard against wild elephants, rhinos, lions, leopards and snakes, but he does enjoy the sight of wild ostriches, gemsbuck, zebra, springbok and countless other species of game, this territory, except for a few centres is still unspoiled by civilization. In these areas there are no roads, railways or even people and apart from the hobby interest there are so many other pleasant compensations for the rock hound. To roam the veld has become a fanatical pastime to so many, from important business executives to the most humble labourer, they all love these excursions after stones. Many have beautiful display cabinets and others simply arrange their finds in any convenient place in their homes."

SPAIN—Tiny colorless dolomite xls with tiny blood-red cinnabar xls and both on a red mass of cinnabar was an interesting specimen received from Juan Montal, Plaza Sgdo. Corazon 1, Villafraanca del Panades, Spain. The locality for this specimen are the world-famous mercury mines at Almaden, Ciudad Real Province, Spain.

WALES—John S. Albanese, P.O. Box 221, Union, N. J., sent in a white, xled calcite on xline galena. The calcite fl. a brilliant red under the long wave. "Calcite (nailhead spar) on galena. Tre-castell Mine, Henryrd, Conway, North Wales, Great Britain." —on label.

ARIZONA OBSIDIAN NOTES

R. A. RICHARDS

Box 44, Morristown, Arizona

Obsidian, quit rare in the Eastern, and Middle U.S., is very common thru the Western States. . . extending well into Old Mexico, and about half way down Baja Calif., Old Mex. Obsidian is a natural volcanic glass which has cooled too fast for any atoms or ions to group into regular arrangements of the minerals. With time, obsidian tends to crystallize into fine grained rock. . . or alter, by taking on moisture into such materials as perlite. The American Indian prized this material (obsidian) highly. . . the Aztec, Mayas, etc., also found it a very useful material. . . its uses included weapons, tools, and as decorative medium. Obsidian has an interesting internal structure. . . 'flow' lines are commonly well developed, causing unusual color effects: sometimes a beautiful silvery 'sheen'. . . it can be green, black, red, brown, pink, or even violet in color. Water content is low, silica high, specific gravity quite low. . . Obsidian is the non-crystallized equivalent of rhyolite and granite. . . it is, strictly a lava flow. This material is quite good, for gem making. . . will work up nicely, either cabochon, or facet.

Thru the Arizona deserts (and elsewhere) a nodular type obsidian, known locally as "Apache Tears," is well distributed. Among this material is a certain type, showing very pretty 'smoky' to 'golden' hue, when held up to the sun: this is the 'Merikanite', an excellent representative of obsidian, suitable for facet work. This type runs substantially harder than usual obsidian. This writer has tested some 'Merikanites' that were $6\frac{1}{2}$ on Mohs Scale. The less informed should beware, as these have been sold as 'smoky' topaz. . . a hardness test will quickly prove what's what, as topaz is much the harder material (8 points) and, of course, is aluminum fluo-silicate. One location, for this 'Merikanite' material, is

south, from Aguila, Arizona (Maricopa Co.) This area is easily reached with stock cars. Road running south, from Aguila, takes you thru to the Vulture Mine. . . obsidians are found, scattered over the surface, in considerable quantity, along this route. The Vulture Mine Area can, also, be reached from Wickenburg, Arizona, by way of Gravel Road.

Along with the 'Merikanite' material will be found many nodules not suitable for cutting. These will appear solidly black and opaque—or have a burnt look, etc. Near Superior, Arizona (Pinal Mts.) the "Apache Tears" occur in pearly white alteration of obsidian, perlite. Scattered thru the perlite, like 'plums' in the well known 'pudding,' this material makes very nice mineral specimens for the collector. This perlite, by the way, is a most interesting, and valuable type of alteration. Water content is very high. . . by subjecting this material to intense heat, it explodes, forming the commercially valuable insulation known as 'Perlite'. . . in looks, it is much like pumice. Excellent insulator against both heat, and cold. In closing, allow me to make a special note, for those who do not often leave the pavements. Never leave the paved roads in Arizona before inquiry is made as to conditions in area you propose to travel. Ask locally regarding conditions, etc. (and don't take One Man's word for it). If it is necessary to cross sandy washes, NEVER ENTER SANDY STRETCHES IN HIGH GEAR: shift to SECOND GEAR (not low) and KEEP UP SPEED AS HIGH AS IS SAFE.

This writer glad to answer inquiries. . . also, for the Sand collectors. If any would like a sample of perlite (either processed, or "natural" or the "Apache Tears". . . send along a 4 Dram, clear glass vial. Regards to the "Gang."

NOTES ON SOME SEARLES LAKE MICROMOUNTS

G. VI GARIO

2231 Pine Street, Bakersfield, Calif.

Searles Lake, a salt crusted brine deposit located some 150 miles north of Los Angeles, Calif., is an evaporation remnant of a long string of ancient lakes. This lake, and others, is all that remains of a once much larger group that extended from Lake Owens, to Indian Wells Valley, and to the now non-existent Lake Manley in Death Valley. As the water supply for Searles Lake diminished, the salts present became so concentrated that eventually a thick crust was formed over the saturated solution.

At this lake the brine is tapped by pumps that send it to a plant at adjacent Trona where commercially valuable salts are recovered. Whenever a new pump is installed, the core section cut from the crust is usually sent to a research lab; however, certain collectors may be fortunate enough to be present at drilling time and to be able to obtain xlied sodium and potassium minerals. Those most commonly observed are Hanksite, Burkeite, Gay-Lussite, Pirssonite and occasionally Northupite, Tychite and Sulphohalite. Too, there are a few collectors that possess rare prizes as Schairerite, Searlesite, and the newly discovered Gayleite.

Most collectors of Searles Lake minerals are familiar with them in the macro xl forms; nevertheless, rich rewards can be gained from micromount specimens. However, there is one slight drawback to micromounting these minerals; the action of the atmosphere tends to disintegrate such specimens unless adequate preservation methods are employed. Great care must be exercised in seeing that the m/mt boxes are completely sealed. Once a satisfactory sealing and preserving method is used, the minerals are perfectly safe. The author recommends that any leaks in the boxes be plugged with sealing wax, paraffin, or dental casting wax. It is most advisable to put a drop of thick clear oil on the specimen after each viewing session.

The following list of minerals are typical examples of micromount specimens.

Northupite:

1. a 2 mm octahedron, yellow-orange, with inclusion of green-black mud. There is a very slight cleavage at one of the tips of the terminations, but the rest of the specimen is nearly perfect.
2. a 1 mm octahedron perfect except for slight cleavage on two termination tips. Out of 15 Northupite xls studied, this was the only one to greenish-yellow.
3. a double xl made up of a 3 mm 8-ron, and a 2 mm 8-ron in close association. One side of this xl is very sharp and clear, but the other has been reduced to a rough state by some type of chemical erosion.
4. a 3 mm 8-ron, with yellow-orange tips and a gray-black center. This xl is imbedded in a skeletal xl of Pirssonite.

Pirssonite:

1. a 3 mm hemimorphic xl (check with Dana for drawing) with 2 or 3 inclusions of light brown mud. There is a minor amount of surface erosion that reveals skeletal patterns, but all-in-all this is a good, sharp, clear xl.
2. a 2 mm xls much like #1, except that the ends of two opposite terminations are flattened. The major variation in this one group of Pirssonite xls appears to be the flattened, or non-flattened terminations.

Gay-lussite:

1. a 4x2x2mm clear xl very much similar to illustration 800 in Dana's text, 4th edition. However, this specimen shows internal fracturing that bears a great resemblance to a phantom xl. Perhaps it is a combination of a phantom and a fracture. There are skeletal xl markings along one of the termination edges.

2. A $2\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{1}{2}$ mm sharp, clear, clean that resembles the one illustrated (#799) in Dana's text, 4th edition. Only two minor fractures mar the perfection of this specimen.
3. A $7 \times 3 \times 2$ mm very much elongated xl. This is an interesting variation of the standard textbook form. Aside from the odd elongation, this xl is nearly skeletal.
4. a 10 mm square piece of Tincalconite

with 5 $3 \times 3 \times 2$ mm gay-lussites imbedded in it. In this one particular core section from which all of these specimens were recovered, occurrences such as this are very, very, rare.

The author of this paper is most anxious to hear from those collectors who have also done micromounts of Searles Lake minerals, and also from those collectors who are interested in such minerals.

GEOLOGY MONTH FOR BOY SCOUTS AND EXPLORERS—OCTOBER 1957

Next Fall more than four million men and boys will have an opportunity to learn something about geology because October 1957 has been designated geology month for Boy Scouts and Explorers. Two committees of geologists (American Geological Institute and American Association of Petroleum Geologists) are preparing a program for the month's activity, which will be outlined in the BSA PROGRAM QUARTERLY. This outline will be supplemented by a kit of materials and information which will be distributed to the 68,000 Scout and Explorer units throughout the United States.

The committees need a number of craft projects, things that can be built with materials at hand, in this field. Perhaps in your contacts with collectors and amateur clubs, many things of this nature have come to your attention. If you can supply us with a description of some items for craft activity, it will be greatly appreciated.

Every geologist who can spare some time in September and October will be

asked to help direct this month's activity in his local Scout council. However, there are hundreds of places over the country that will not be able to find a geologist to assist them. I believe that probably there are several thousand amateurs and semi-professionals who have an avid interest in many phases of the earth sciences that can help tremendously with this program. Any suggestions you may have on how to reach these persons will be very helpful.

Perhaps you may wish to run an announcement of this program and some short articles about it in ROCKS AND MINERALS between now and September 1957. If so I'll be happy to send you some material. The first notice will appear in the January 1957 GeoTimes.

Chalmer L. Cooper
Chairman, American Geological Inst.
Boy Scout Committee
(U. S. Geological Survey,
Washington, D.C.)

Nov. 30, 1956

Do Stop In!

Editor R&M:

If you ever get out this way do stop in. Open every day including Saturdays and Sundays but closed Monday. I wish we could have a mineral show up this way some time. Another new mineral club has just been formed in Meriden, Conn.

Howard Pate, Prop.
Fluorescent House, Beach Place
Branford, Conn.

Oct. 9, 1956

R & M—A Newsy, Friendly Magazine!

Editor R&M:

After comparing my first copy of R&M with another publisher's magazine, I really appreciated your magazine all the more. Please accept my thanks for a newsy, friendly magazine that also gives names and addresses of fellow collectors and potential friends.

Mrs. Alton Horne,
308 Coolidge,
Ponca City, Okla.

Sept. 20, 1956.



Magnetite sand from Tuolumne Lodge, Calif.

From Tuolumne Meadows Lodge in Tuolumne Co., Calif., we have a sand sample that was sent us by Arthur W. Browne, 623 Palo Alto Ave., Mountain View, Calif. The sample is a fine grained black sand consisting chiefly of black lustrous magnetite with very small amounts of colorless quartz, pale pink garnet, black ilmenite, and brownish zircon that fl. orange.

"A gallon of this sand is in sight on water's edge at top of the falls in back of Tuolumne Lodge, Lyell Fork, Tuolumne River, upper Yosemite, Calif."—on label.

Beach sand from near Ft. Myers, Fla.

From the Gulf of Mexico in Lee Co., near Fort Myers, Fla., we have a sand sample that was sent in by an anonymous collector. It is a very fine grained white sand (looks like sugar) and all colorless quartz except for a few grains of broken sea shells; some of the shells fl. pale yellow under the lcag wave.

Beach sand from Kennebunk Port, Me.

Mrs. Olive E. Looney, Lincolnville, Me., sent in this sand. It is a fine grained gray sand consisting of colorless to smoky quartz, grayish feldspar, pale pink garnet, black lustrous magnetite, silvery muscovite, and colorless zircon that fl. orange.

"From Gooch's Beach, Kennebunk Port, Me."—on label.

Kennebunk Port, in York County, is on the Atlantic Ocean.

Lake sand from Indian Lake, Mich.

Indian Lake is in the southern part of Schoolcraft County, Mich. From the lake we have a sand sample that was sent us by Harry A. Laurent, P.O. Box 345, Nashville, Mich. The sample is a fine grained gray sand consisting chiefly of quartz (colorless, smoky, brownish) with some pale pinkish feldspar.

"Sand from the south shore of Indian Lake in the Upper Peninsula, Schoolcraft Co., Mich.—1955."—on label.

Quartz sand from Jackson, Nebr.

Mrs. Ed. P. Olson, Beresford, S. D., collected this sample for us whose locality is in the northern part of Dakota County, Nebr. It is a medium grained, yellowish sand consisting chiefly of quartz (stained yellow by yellow clay) with yellow clay and a tiny amount of silvery muscovite.

"From Jackson, Nebr., on Missouri River bluffs—58 miles from Beresford, S. D."—on label.

Quartz sand from Kingston, N. Y.

This is a very dark gray, medium grained sand collected by the conductor of this department from a large, flat sandy area bordering US 9W on the northern outskirts of Kingston, Ulster Co., N. Y. The sand consists chiefly of quartz (dark smoky, reddish, brownish) with some sandstone (gray, red) plus a tiny amount of black magnetite.

Red sand from Oklahoma City, Okla.

Glen E. Kiser, Douglass, Kans., collected this sample for us which comes from Hwy 77, about 1½ miles north of

Oklahoma City (Oklahoma Co.), Okla. It is a medium grained, bright red sand. All red quartz.

Quartz sand from Crater Lake, Ore.

"This sand is from the wall of the crater on the side toward the west. A road goes around the lake (which lies in an old volcano crater) as near to the top of the crater as it could be built. As I recall it, I got the sand from a road bank as the road came to a look-out point. Everything in that crater rim is as it was blown out by the eruption—with some weathering."—note with the sample sent in by Arthur W. Browne, 623 Palo Alto Ave., Mountain View, Calif.

The sample is a dark gray, coarse sand consisting of smoky quartz, black lustrous hornblende, black magnetite, a little black mica and some brownish lava rock.

Quartz sand from Rattlesnake Butte, S. D.

Charles Preheim, Freeman, S. D., sent in this sample which he had collected for us. It is a grayish, medium grained sand consisting chiefly of quartz (colorless to smoky, with gray, brown chalcidony) with some garnet (pink, opaque to transparent), black magnetite, colorless calcite and some small, gray sand calcite xls. Rattlesnake Butte (also known as Devil's Hill) is in Washabaugh County, in southwestern South Dakota.

"This is the sand in which the famous sand calcite xls occur."—on label.

Creek sand from Greenville, Texas

This is a reddish-brown, medium grained sand consisting chiefly of reddish (iron stained) quartz and red shale plus a tiny amount of black magnetite. It was collected for us by Mrs. Ruby Renfro, 2901 Bomar Ave., Fort Worth 3, Texas.

"Sand north of Greenville in Honey Creek, Hunt Co., Texas."—on label.

Brook sand from Montpelier, Vt.

This sample is a dark gray, coarse sand consisting of smoky quartz, mica schist (dark gray), gray granite, black magnetite and red garnet. It was collected for us by Mrs. Anna Walbridge, 520 Elm St. Montpelier, Vt.

"From brook flowing into No. Branch of Winooski River—Shady Rill (just about 5 miles north of Montpelier, Washington Co., Vt."—on label.

Pegmatite sand from Amelia C. H., Va.

We are indebted to Mr. and Mrs. George Barclay, Box 433, Newport News, Va., for this sample which is a medium grained, gray sand. The sand consists of quartz (milky, smoky), black biotite, silvery muscovite and feldspar (pinkish, white).

"Pegmatite sand, 4 miles west of Amelia Court House (Amelia Co.), Va.,"—on label.

Beach sand from Moclips, Wash.

John Soyat, 7019-16th Ave., S. W., Seattle 6, Wash., collected this sample for us. It is a dark gray, fine grained sand consisting of green epidote, pinkish garnet, black magnetite, and white quartz.

"This sample comes from a beach on the Pacific Ocean, a few miles north of Moclips, Grays Harbor Co., Wash."—on label.

Lake sand from Lake Dauphin, Canada

Lake Dauphin is in the southwestern part of the province of Manitoba in southern Canada. From the shores of this lake we have a sand sample that was sent us by Glen E. Kiser, Douglass, Kans. The sample is a fine grained, gray sand consisting chiefly of quartz (chiefly colorless, some brown, smoky) with a small amount of grayish shells which may be snail shells; some of the shells fl. a pale yellowish under the long wave.

River sand from Barranquilla, Colombia

Barranquilla, a busy city of some 65,000 inhabitants on the left (west) of the Magdalena River in northern Colombia, is about 7 miles from the river mouth. The Magdalena River is over 1,000 miles in length (navigable for 930 miles) and is the fourth largest river in Colombia, exceeded in length only by the Amazon, Orinoco, and La Plata.

From the river beach in Barranquilla we have a sand sample that was sent us by W. T. P. O'Gara, Dept. Exploration, International Pet. Co., Ltd., Edi-

ficio Colombiana De Seguros, Bogota, Colombia. The sample is a medium grained, brownish sand. It consists of quartz (smoky, white, colorless, brown) and feldspar of a pale flesh color. A very tiny amount of black magnetite, also present.

Beach sand from Kingsgate, England

Kingsgate on Kingsgate Bay is on the east coast of Kent in southeastern England. From the beach at Kingsgate we have a sand sample that was sent us by Glen E. Kiser, Douglass, Kans. The sample is a fine grained, brown sand, consisting entirely of quartz—brownish, colorless, reddish.

Zircon sand from Baboyahui, Mexico

This sample comes from branch of Baboyahui Arroyo, near village of Baboyahui, on the Baboyahui Rancho (17,800 acres) about 50 miles easterly of Alamos, Sonora, Mexico. The locality however is in the state of Chihuahua which borders Sonora. The sample was sent in some months ago by Alberto E. Maas, Alamos, Sonora, Mexico.

The sample is a coarse, dull black sand consisting chiefly of coarse, dull black magnetite and gemmy brownish zircons. Though many of the zircons are tiny xls, none are fl. Some tiny black chromite grains are also present.

Garnet sand near Cozy Nook, New Zealand

Cozy Nook is on the southern coast of South Island, New Zealand (on Fovcanx Strait). From the locality we have a sand sample that was collected for us by Miss Winifred H. Arnold, 2020 Magnolia Ave., Long Beach 6, Calif. The sample is a dark red, medium grained sand consisting almost entirely of garnet (nice red gemmy xls). A tiny amount of black magnetite is also present.

"We could not find this beach the first time we drove down there. The next time we stopped at a farm house to ask directions, and the farmer said he would go with us. We were on the road to Pahia, then turned off on another little dirt road. The garnet beach doesn't seem to have a name but it was not far from Cozy Nook. It is a

small beach, more like a bite taken out of the coast line, with steep cliffs and the beach itself is solid rock with a very rough surface. The garnets were underneath the beach sand in little pockets. We were told that at times, due to certain actions of the water, the beach is all red garnets.

"I have taken out the beach sand and did so by putting a spoonful of sand on a stiff piece of typing paper and rolling the garnets off onto another paper. The garnets roll off the paper like a little stream of ants. They also told us that these garnets are too small to be of any commercial use."—on label.

Shell sand from Bramble Cay Island, Papua

Papua occupies the southeastern section of New Guinea, the world's largest island. The word Papua comes from the Malay meaning "the land of frizzled men." Bramble Cay Island is a small island in the Gulf of Papua which indents Papua on the south.

From Bramble Cay Island we have a sand sample that was sent us by Max Haleck, Pago Pago, Tutuila, American Samoa. The sample is a medium grained, attractive peach colored sand, nicely rounded. Except for a tiny amount of black magnetite, the sand consists entirely of sea shells (chiefly peach colored, but white, reddish, also present).

"Sand is from Bramble Cay Island in the Gulf of Papua, about 40 miles east of Daru Island (uninhabited.) Only has light house."—on label.

Beach sand from Safune, Savaii, Western Samoa

Safune is a town on the north coast of Savaii Island (the westernmost and largest island of Western Samoa, a territory administered by New Zealand). All the islands of Western Samoa are mountainous, the highest mountain 6,096 feet is on Savaii. Savaii has an area of 703 square miles.

From the beach at Safune we have a sand sample that was sent us by Max Haleck, Pago Pago, Tutuila, American Samoa. It is a black and white fine grained sand consisting of brown to al-



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BIRTHPLACE OF HUGH MILLAR, CROMARTY, GEOLOGIST
AND AUTHOR OF "MY SCHOOL AND SCHOOLMASTERS," "FOOT-
PRINTS OF THE CREATOR," ETC. BORN 10TH OCTOBER 1802
DIED 24TH DECEMBER 1856

A7334

Birthplace of Hugh Miller, famous early geologist, at Cromarty, Scotland.

most black olivine, with black magnetite, white sea shells, and gray coral.

Beach sand from Cromarty, Scotland

Cromarty is the county seat of Cromartyshire in N. E. Scotland. It is located at the N. E. tip of Black Isle, the name given to the peninsula between the firths of Beaulieu (s) and Cromarty (n); the two firths combining on the east to form Moray Firth. Black Isle obtained its name from the black color of its soil.

Cromarty, which lies on the west side of Cromarty Bay, is noted as the birthplace of Hugh Miller, one of the fathers of geology. On a hill above the town rises a pillar-statue of red sandstone to the memory of Hugh Miller, born Oct. 10, 1802, in a humble cottage close to the churchyard which contains several tombstones cut by him while a mason. He died Dec. 24, 1856.

From the beach at Cromarty we have a sand sample that was collected for us by Sandy Ramsay, 1015 Aikenhead Road, Kings Park, Glasgow S4, Scotland (see World News in this issue, under Scotland). It is a medium grained, brown sand consisting chiefly of quartz (brown, colorless, brown chalcedony) with minor amounts of pinkish garnet, black magnetite, colorless muscovite, and sea shells (brown, white).

Wants his R & M!

Editor R&M:

Please find herewith a money order for \$3 to renew my subscription. I have not sent it in sooner for the reason that I doubted I would live through the summer. But my health is improving and I may stay a while yet—and though my collecting days are over I want my ROCKS AND MINERALS so that I may still know what is going on mineralogically.

J. B. Carson
Home for Aged Masons,
Arlington, Texas.

Aug. 31, 1956

R & M—The Best!

Editor R&M:

Any publication reflects its editor. Behind every good publication is excellent management. ROCKS AND MINERALS—the BEST!

Martin W. Siebert
680 Clark Ave.,
Webster Groves 19, Mo.

Sept. 7, 1956

"Beach sand, Cromarty, The Black Isle, Scotland. Picked up at the beach nearest to the house where Hugh Miller, one of the 'fathers' of Geology, was born."—on label.

Garnet sand from Swakopmund, S. W. Africa

This is a fine grained, reddish sand consisting chiefly of pink to reddish garnet, with smaller amounts of lustrous black magnetite, brown monazite, green epidote, and colorless to smoky quartz.

"Sand from beach at Swakopmund, S.W. Africa. A typical and representative sample of this coast (South Atlantic)." —on label of sample that was sent us by G. E. Wepener, Mines Department, Omaruru, S. W. Africa.

River sand from Erstfeld, Switzerland

A subscriber in Switzerland (who wishes to remain anonymous) sent us this sample which comes from the Reuss River in central Uri Province (Kanton) of central Switzerland. The sample is a fine grained, gray sand consisting of quartz (colorless, whitish, smoky, brownish), whitish feldspar, whitish muscovite, black biotite and a tiny amount of black magnetite.

"From the Reuss River near Erstfeld, Kanton Uri, Switzerland."—on label.

The Reuss River flows north through Kanton Uri, and Erstfeld is on its west bank.

Tom Roberts dies in Chicago

Editor R&M:

As perhaps you may have known, Tom had been ill for about three years and it is with great sorrow I must write you that he passed away on October 31, 1956.

It is my intention to carry on here at the shop and I want to thank you at this time for your friendliness towards us and our shop which we have enjoyed for these many years.

Mrs. Tom Roberts,
Tom Roberts Rock Shop
1006 S. Michigan Ave.,
Chicago 5, Ill.

Nov. 12, 1956

Editor's note: The Editor visited the Roberts Rock Shop a few years ago and was most enthusiastically received for Mr. & Mrs. Roberts were two very, very friendly people. We do hope that our many subscribers and friends in the Chicago area will continue to patronize Roberts Rock Shop and give Mrs. Roberts their loyal support and encouragement.



WOMEN'S CORNER OF R&M

Conducted by Winnie Bourne
c/o Rocks and Minerals

Box 29, Peekskill, N. Y.

Dear Winnie:

About two months have passed since I wrote you. I am so pleased to read the articles other women have written, and so in hopes that your column succeeds, I'm sending in another one of my many experiences as a rock hound.

Our fair here in Lancaster was Sept. 6th to the 9th. I entered my thumbnail collection, and also a mineral collection, and I'm very proud to say I won first prize on both entries. This makes two years now, that I have won first prize on my minerals.

Thank you for taking space in your column for my articles. Best of luck to you.

Naoma Brooks
44238 N. Date
Lancaster, Calif.

Note: We hope Naoma may repeat again next year as to winning first prize and we offer our congratulations to her on doing so again this year at the Lancaster Fair. You deserve a lot of credit, Naoma, and I know our feminine readers are proud of you. Keep it up. Naoma sent in the following item:

Agate Hunting in Oregon

Anyone that has ever lived in Oregon—and is interested in finding agates—knows that Oregon is God's country for the rockhound. Most any creek bank—river bank, beach or hill, that has any pebbles on it—has either agate or petrified wood, mixed with the other pebbles. You are just apt to find moss agate, banded agate, iris agate, plume agate, jasp agate, petrified wood or jasper, most any place you care to look.

Take the Columbia River for instance. Some friends told me of some very nice piece of wood out of the sand and into

black wood that came from the bank of the Columbia River some seventy miles from Portland, where I was living at the time; where the Wind River emptied into the Columbia River.

My youngest brother and his wife were also interested in rocks as a hobby. So one Sunday morning I called and asked them to accompany me to the Wind River for a picnic and rock trip. Here I thought I would kill two birds with one stone. I had just purchased a new 1947 Chevrolet coupe, and wanted to try it out. We crossed over onto the Washington side of the river at Vancouver, as the road was better and then we didn't have to ferry across the river which sometimes takes a little time.

We arrived at our location about 10 a.m. We left the highway, crossed over the railroad tracks and could drive to within fifty feet of the bank of the river. As soon as we started walking in the sand, we began to find small pieces of the black wood. After walking about an hour, I found a large piece of wood buried in the sand. I dug around it for awhile, and found the more I dug, the bigger the piece got. Finally I called my brother to come give me a hand. As we dug the sand away from the wood, the water kept seeping in around the hole we had made. After an hour and a half we found the piece of wood too large to be moved by manpower. So we hiked down the highway to a farm house. Here we rented a horse and harness for \$5.00. The farm house was a good mile from our car, so here we spent another hour before we could get back to work on our prize that we had found. With the help of the horse, my brother and his wife and myself, we finally tumbled the

the trunk of my new Chevrolet.

The boulder was so large we could not shut the trunk lid down, so we took a burlap sack, covered the top of the boulder, and let the trunk lid just rest on the burlap sack. My brother rode the horse back to the farm house, so of course this mile toward home was quite slow.

About sundown that night we arrived home. When we raised the trunk lid, to unload the boulder, there was a hole about the size of a silver dollar clear through the metal of the trunk lid. The boulder was so heavy that every bump in the road made the trunk lid hit the top of the boulder and after seventy miles, there was a pretty good sized hole in the trunk lid, but I was so pleased with my black wood, I didn't let the trunk lid bother me too much.

When I moved to California I gave my boulder of black petrified wood to a friend, for I felt it was too large for me to move. Now nearly ten years later I don't have even one small cabochon or even a piece of this wood. All I have is the memory of a wonderful rock trip, and the satisfaction of being a rock hound.

Dear Winnie:

Your "Women's Corner" is so very interesting. Keep up the good work. Hope you can use this article in your column which reads as follows:

• **A labradorite find in Nebraska**

Central Nebraska is a poor place for a rockhound to live, as any minerals there might possibly be, are covered with several hundred feet of soil, and very seldom are any "good" rocks exposed. However, I always keep a sharp lookout just in case. The other day I was inspecting my flowers and noticed what looked like a big black bug in a hole. I stooped over for a closer look and saw it was a grayish feldspar. Immediately I picked it up, moistened it and held

it in the sunlight, and was rewarded with a most beautiful rainbow flash of color. It was the most brilliant piece of labradorite I have ever seen, rivaling the most colorful of opal, with every color of the rainbow from a bright coppery red to a deep velvety violet. If only it were a little bigger, my joy would be complete. It is only 1" x 1½", but at least proves that even the most unpromising locality may reveal something worthwhile if we don't give up. I'll never feel quite so discouraged again when there seems to be no way to pursue my favorite hobby. Thank you for this chance to "sound off" a little in your column.

Mrs. Robert Cook
Callaway, Nebr.

Dear Winnie:

Thought I'd contribute my two cents worth to your fine 'corner'. I was born near the Wichita Mountains in Oklahoma and spent many school vacations there. Though the mountains no longer seem as large as they did when I was a child, it is still a great thrill to see them in the distance as a purple haze—then larger and as we come near I always want to climb them.

My husband who comes from Virginia refers to the Wichitas as rock piles, but it is a great thrill to climb bouldered Mt. Frisco near Mt. Park and after reaching the top to scan the town and countryside in peace and contentment that no money can purchase.

I have geodes and pectolites from that area—several colors of granite, a gypsum rosette and other rocks from different localities. In the past I've been interested in archaeology and now am interested in geology and "mad about" rocks and minerals. Hope someday to carve cameos and intaglios.

Mrs. Alton Horne
308 Coolidge
Ponca City, Okla.

Dear Winnie:

I get no other magazine of this nature and feel that R & M will fill the need. Studying geology in my spare time as you know the next step is rock collecting—then minerals—I am completely at sea in my present collection. A mixture of rocks, minerals, fossils, etc., with no positive way of identifying as yet. This is a two year old hobby and self-education venture.

Just received some books from N. Y. State Museum at Albany which will no doubt help. My problem is, where can I find near at home a means of verification of my conclusions. Perhaps you can advise me.

I do not want to purchase a collection. Most of the fun is getting together a few friends and school youngsters and getting out to some locality for specimens—trying to identify can be completely confusing at times.

For instance, a few weeks ago I went to Glen Cove, Long Island, N. Y., for clay and concretions. We picked up many 'sandstone concretions' or 'limonite geodes' (2 books, 2 names). Then countless masses of bronzy and some rusty crystals.

The bronzy or yellow I found to be marcasite, on reading further, I found that marcasite is in nodular concretions in the Cretaceous clays of Long Island. I had the nodular concretions—I got them in the Cretaceous clay of Long Island. The color is whiter than pyrite, crystals

seem to be in radiated formation—so do I label it as correct or will I ever be doubtful as to what it is? Along with these nodules were chunks with much iron rust—crystal form on some of the exterior—when broken same as marcasite in color, mixed with yellow and a small amount of bluish sheen. Mixed in with this is much black which I think is pyrolusite. Anyway the white mineral does not check out as marcasite—the streak is not the same. I'm stumped over that one.

I think your Women's Corner is a fine idea! Here's a dollar for your department.

Jeanne M. Audevard
RFD, Pleasant Valley, N. Y.

Dear Jeanne:

Glen Cove is noted for 3 minerals—brassy-yellow pyrite, a whiter pale brassy-yellow marcasite, and black lignite. If your black mineral looks a little like charcoal, then it is lignite. If your marcasite or pyrite specimens show some white dusting, the white dusting may be melanterite (taste it and if it has a sweet, astringent taste it is melanterite). It is not good however, to have a mineral coated with melanterite as this indicates that the mineral is decomposing and in time would fall apart as crumbling worthless masses. The yellow mineral or stain is limonite; the bluish sheen is due to iron. The white may be marcasite (paler than usual). A geode is a hollow concretion. (See Nov.-Dec. 1955, R & M, p. 577, for a discussion on how to distinguish between nodules, geodes, and concretions.).

LOOKING BACK TWENTY-FIVE YEARS AGO

in Rocks and Minerals

Dec. 1931 Issue

The preparation of micro mounts, by L. C. Wills, M.D., the first of the many articles on micro mounts to appear in R & M, pp. 149-171. Due to the length of this article and its many illustrations,

this issue has been known as the micro mount issue. No more copies are obtainable, issue all sold out.

The significance of Van Hise rock, by Frederick Shepherd, pp. 172-174.

THE MICRO-MOUNTER

Conducted by Neal Yedlin, 129 Englewood Dr., New Haven, Conn.

We've mentioned this before. The Baltimore Mineral Society issues a bulletin periodically called "The Pegmatite." It is a superb job, devoted to minerals, localities and wonderful information. Some time ago, Paul Desautels, the founding father of the society, with an assist from Lou Perloff (the other end of the New Haven, Baltimore, Winston-Salem,

N. C. micro-mount axis) published some notes on identification of lead oxychloride minerals from the slags of Laurium, Greece. He's given permission to reprint the article, a noteworthy one, and a "must" for serious mineral collectors. Here it is, with a bit of streamlining to make it fit into the confines of this column.

NOTES ON MINERALS FROM LAURIUM, GREECE

PAUL E. DESAUTELS

To the micro-mount collector the lead slags from Laurium, Greece, offer high adventure.

Many of us know the story of the origin of these slags which came from the ancient Greek mines probably at the time of the Graeco-Persian wars. From the smelting process, the waste slags were dumped into the ocean where centuries of exposure to sea water created a series of lead compounds, some which were first found here.

The micro-collector finds his adventure in the examination of the sharp, brilliant, transparent, colorless crystals which glisten like cut gems in the dull gray cavities of the slag. The crystals are indistinguishable from each other for the most part except for differences, often slight, in crystal forms. Since the true devotee of micro-mounting performs 99% of his identifications by visual means, these differences assume paramount importance.

Recently, the unexpected happened and I found time for detailed examinations. The following notes are the result. They were incorporated in a letter which I sent to Mr. L. Perloff, who has similar interests, with a request for his comments. His response is added to my notes.

According to Dana 7, we might expect to find (1) laurionite (2) paralaurionite (3) penfieldite (4) fiedlerite (5) phos-

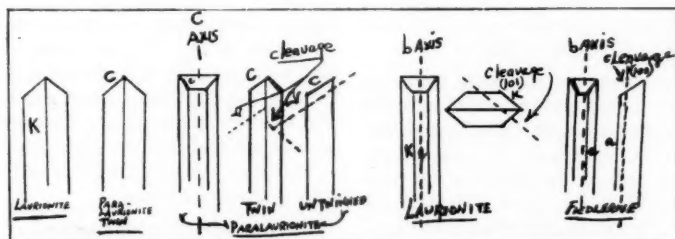
genite (6) cerussite (7) anglesite (8) matlockite (9) galena (10) georgiadesite. I'd like to use that as a starting point. (9) Galena, we can knock off right away because it's metallic and cubic if crystallized. It's not pretty and is a common mineral but I had never seen it before from Laurium. (6) Cerussite, is the only carbonate in the group, and a bit of a drop of acid on an isolated fragment should give effervescence. I realize this is a dirty trick, resorting to chemistry, but otherwise this cerussite can be tough. I have just mounted nine specimens showing five entirely different habits, at least one of which shows the butterfly twin like the middle one on page 203 (Dana 7). (10) Georgiadesite, should be fairly easy to spot because it is stubby and pseudo hexagonal and tends to have a platy structure. As far as I can see it might be confused only with matlockite and penfieldite. However, since both have a basal cleavage and georgiadesite has none it should be possible to make the distinction. If twinned, georgiadesite takes on a platy appearance which might look like aggregates of matlockite crystals except that the plates would run just about at right angles to the plates of matlockite when it forms its hemispherical aggregates of platy crystals. (8) Matlockite, can be distinguished because it is tetragonal and

platy as mentioned before. (3) Penfieldite, as mentioned before, is hexagonal and has a basal cleavage which together will identify it. (5) Phosgenite, is tetragonal with at least 2 definite cleavages at right angles (i.e., 001 and 100.) (7) Anglesite, is unmistakable orthorhombic with a basal cleavage. By distortion there is a faint possibility of confusing it with phosgenite but the lusters of the two are quite different. To me, phosgenite is far more adamantine and limpid.

This leaves the big three, laurionite, paralaurionite and fiedlerite. I think this one is under control too, even though, by external appearance, the crystals may seem identical. All three are prismatic. Laurionite is prismatic by virtue of an elongated b axis, paralaurionite an elongated c axis, and fiedlerite an elongated b axis. Laurionite with orthorhombic symmetry occurs in crystals which might just as easily be twinned paralaurionite, which, even though monoclinic, assumes a false orthorhombic appearance by twinning. The two could be indistinguishable. By cleavage, however, laurionite shows a distinct "k" cleavage down the length of the crystal while paralaurionite has a "c" cleavage confused by the twinning but nevertheless running across the end of the crystal. The fiedlerite is much like the laurionite and paralaurionite except that it tends to look monoclinic when the paralaurionite does not. In any event, the cleavage here is parallel to "a" on the flat side of the crystal. In addition, Dana 7 obligingly says that the faces on fiedlerite are usually poor. Well that does it! I'll admit that most of these identifications require destruction of the specimen but I'll justify

them by saying that in our game we usually have much material to experiment with in the way of an extra crystal or two, and our extrapolations run about 99.9% correct.

Mr. Perloff's remarks follow:—"I am taken with your modest estimate that our guess-by-eye identifications are usually 99.9% correct. Your use of acid to clinch the identification of cerussite reminds me of the people who use dictionaries in solving cross-word puzzles. It does clear up the cerussite problem and cerussite in excellent quality from Laurium is no slouch. As to the possible omissions in the lists, I'd suggest adding smithsonite as cream white globules in the hollows in the slag. In one mount I have, the hollow is filled with minute xls of galena, themselves invested by these minute white globules. As to the others you name: Phosgenite could never be confused with anything else. All that I've seen from Laurium have been short prismatic. One that I have shows a beautiful development of the three prisms and pyramids, almost equal in length, topped by a large "c." It is glass clear. These are altogether unlike the phosgenites of Arizona, which are either long prismatic or topped by steep pyramids. Georgiadesite is one we shouldn't have to worry much about in view of its occurrence in only one specimen. I have no idea how carefully these slag minerals have been studied in micro-mounts so I wouldn't write it off altogether. I only wish we had more material to work with. I'd wager that in our own stumbling fashion we give this stuff as ferociously intent observation as it's ever received.



All crystals simplified and not to scale. From drawings by Paul E. Desautels.

One curiosity I've noted in a number of specimens is a group of brownish, skeletal xls that are evidently altered or partly formed laurionite.

These look like minute squarely-turned hairpins. They are always a dirty white in color and I've noted them in hollows with phosgenite.

The only matlockite I've ever seen has been from the English localities. All of it has been a waxy yellow. Since it is tetragonal, tabular (001) and platy this should be guide enough. Dana notes that laurionite and paralaurionite are near the layer structure of matlockite. My recollection is that the matlockite cleavage is perfect and that it is a good deal harder than paralaurionite which also cleaves on "c." As you've noted, the Arizona material bends easy.

I don't think the penfieldite could be confused with either of the previous two if those I've seen had been properly labeled. The xls are minute, colorless and seem to be conventional prisms with some pyramid development. I have tried these at 90X but still can't make anything more of them. I do know they resemble no other mineral noted in the group.

Theoretically, fiedlerite should be fairly easy to spot, being the monoclinic member with lath-like development, elongated on the b axis. There is a trap here in the fact that paralaurionite, in somewhat similar habit, would have an elongated "c" face where the dominant "a" face was square tabular. If the prisms and pyramids in penfieldite were not so sharply pronounced, you'd have a pretty time of it differentiating between the two. Cleavage would be "c" on both, luster alike, with twinning on 100. Hardness would seem to be the best guide, with additional reliance on the fact that para goes this-way ↑ and fiedlerite thatway→.

As to comment on laurionite, let's just rely on its being orthorhombic and the fact that monoclinic fiedlerite, with elongation on the same axis, has poor faces. I've never seen a laurionite with poor faces yet. I always think pityingly of hand-specimen collectors when I think of this species. Anytime you come across a

spare 6x6x6 chunk of slag with laurionite in it send it along. (Ed. Note-What a dreamer!) I could stand about 100 mounts of this wonderful species in my collection. The diagrams you made in re cleavage in laurionite, etc. are limpidly clear. I wonder, though, whether cleavage in both "c's" of a paralaurionite contact twin would simultaneously be developed by pressure from one direction only. The trouble with Dana is that it gives no hardness for paralaurionite, indicating only that it is soft. Some of the Arizona paralaurionite seems sectile-soft. Laurionite and fiedlerite are both $3\frac{1}{2}$. The "k" cleavage of laurionite should look quite different from the "c" cleavage of paralaurionite.

All of this musing may only muddle the situation since the material to check it is, alas, non-existent in my neck of the woods. Any time the Greeks want to make partial payment for some of that aid, they might advance the cause of science no end by sending a few bucketsful of slag for study.—"

We should like, at this time, to express our thanks to the Baltimore Mineral Society for conferring upon us a great honor indeed. We were elected to honorary membership in this fine organization some years ago. The fact that no column of ours has appeared since that of the Jan.-Feb. 1954 issue of *ROCKS AND MINERALS* (except Sept.-Oct. 1956) explains the belated public recognition of this honor. Gentlemen, thank you. We shall try to live up to your standards.

And while we're on the subject, a word or two about the society. The members are interested in minerals. Many are m/m collectors, and good ones. The organization is small and select. As Harold Levey, its president, remarked at its annual dinner in 1955, "We feel that membership in a mineral society is not a spectator activity, but is rather a participating one. We want members who will *do* minerals, and do not merely come to be entertained at meetings. Quality of membership, not size, is important to us."

To this the Micro-mounter adds his fervent "Amen." Let there be light.

MINNESOTA AGATES

The area around Hopkins (Hennepin Co., Minn.) is a special glacial formation of high hills and much clay and gravel. It is abundant in rocks of various colors, forms and variety. The area is rapidly being leveled to make room for businesses and home construction. This affords a rock hound a chance to browse around these projects and look for specimens.

The agates one finds are of various colors such as red with multi-colored banding, blue agates, jasp-agates, carnelian, eye-agates and once in a while a dark, almost black one. The large ones are not plentiful but you find one once in awhile.

The Minnesota mornings and evenings are beautiful in the summer time and it is a real treat to get up early and ramble over to some sand pit and see agates in the morning sun. You scare a sandpiper off her nest sitting on the crest of a sand ridge. An occasional Chinese pheasant honking in a near by meadow. It isn't uncommon to find deer tracks in the clay. In the evening when all the workmen have quit for the day and the bulldozers are gone you will find tranquility and beautiful sunsets. The agates will gleam under the last rays of the sun.

Another type of agate that has much beauty is the pebble or pea size agate. These are usually oval to round in shape. Some are translucent and others have a hard shell. Some have very nice pattern and I suppose if tumbled would produce a great variety of beauty.

Occasionally you find a carnelian. These are a darker red and more solid in color. One should collect all the jasper that is available and take it home for sorting and exchanging with others. My little daughter, Jeonine, ten years old, is an avid agate hunter and she will pick up jasper too.

Another type of specimen you will find in the gravel pits is a quartz with iron oxide coloring. These look and feel

greasy due to abrasion. It resembles Montana agate as some have black inclusions similar to the Montana type.

You will find some specimens hard to distinguish from agate as it is a quartz with various colors resembling agate. It sure adds much pleasure to the hunting to pick these odd colors and shapes and try to tell them apart from agates. These are usually colored by iron oxide and are quite pretty. Some contain chert nodules and flint.

Dr. George Theil of the U. of M. has been helping me identify some of these specimens and I will send some to ROCKS AND MINERALS for their observation.

Well it looks like I rambled off into a long story but I just wanted to point out to other non-travelers that you can find a lot of enjoyment close to home if you only go out and look.

I think our Minnesota agates are tops for variety, beauty and abundance. Novices soon learn to identify agates. I will appreciate any letters and may even send a sample agate to any novice.

Adolph A. Sidla
201-15th Ave., North
Hopkins, Minnesota

Keep Micro-Mounter Department Going!

Editor R&M:

The Sept-Oct, 1956, R&M, was most welcome since it had two articles devoted to micro-mounting. I have been wondering if you were going to keep Yedlin out for good. I am a micro-mounter of some years standing but due to my residence here in "Uncle Sam's Icebox" I have very little opportunity to come in contact with any others of the same interest. Please keep up the good work by continuing articles on micro-mounting and keep the Micro-Mounter Department going too.

Would be happy to correspond and/or trade with other micro-mounters.

R. B. McLaughlin,
Star Rt. B, Box 3899-I
Spenard, Alaska.

Nov. 27, 1956

THE AMATEUR LAPIDARY

Conducted by Captain George W. Owens

Hq Sq 384th Bombardment Wing, Little Rock Air Force Base, Jacksonville, Arkansas

Amateur and professional lapidaries are cordially invited to submit contributions and so make this department of interest to all

CABOCHON REVIEW

It is sometimes very evident that we often overlook the obvious, or assume that the other fellow is as experienced in our hobby as we consider ourselves to be. This is not always true, as evidenced by several letters recently received. The letters were written by people seeking aid and information concerning one of our basic endeavors in this fascinating hobby. Each asked, in a different fashion, "*How to cut Cabochons?*"

Now in today's enlightened world there are several extremely timely and authoritative books covering this subject. Captain Sinkankas' book *Gem Cutting* is an ideal example. His book gives a thorough and complete description of the art of the lapidist in language that everyone understands and enjoys. Therefore, the authors of the letters were referred to this book and it is hoped that they are now reaping the benefits available to them.

If you have a new member in your club, or know a friend that has expressed interest in our hobby, why not take a few minutes of your time to tell him of the many aids available. Suggest and recommend that they subscribe to one of the hobby's magazines, (ROCKS AND MINERALS, preferred), and tell them where they can get a good catalog or catalogs on items of equipment. Many dealers publish abbreviated catalogs or price lists. If you are on their mailing lists, pass a copy along to others. You will be helping the newcomers to get their feet firmly on the ground and started in the right direction. Men like "Bill" Woyanar of San Diego and Chief Warrant Officer Braun, presently stationed in Montana, have become known all over the world through their efforts on behalf

of the beginners in our hobby. It is fun to help others and often the results are astonishing. I remember when, years ago, I received one of the leading books on jewelry craft from Bill. Now Bill didn't have to send it and it hadn't been requested, but he knew I was starting to try to learn something about silversmithing. The receipt of that book, freely given, stands out in my memories as one of the nicest things that has happened to me in this hobby of ours. So it is easy to help the other fellow, and never believe that the recipient of that help isn't aware of it.

There is a certain fellow member of our fraternity who cuts some of the most interesting cabochons you would ever expect to see. The shape is crooked, the bevel is rolling, and the tops are flat. He gets so much pleasure out of our hobby that only the deepest dyed villain would have the heart to criticize. He is the type that on a field trip, can see and enjoy the full wonders of nature. He never throws away a rock—believing that there must be a good spot in it someplace—always ready to help the other fellow and always has a good word for the rock *you* have selected. Such a fellow, despite his questionable cutting ability, is a fine asset to any club. So it takes all kinds to make a world as well as all shapes to make cabochons.

Cabochons may be cut oval, square, round, pendant, flat, low dome, high dome—or just about any shape you care to try. Certain shapes are preferred by commercial people because of ease in mounting. Several firms market templates to help us mark true shapes. Use of one of these templates may improve your

work. A tip, recently received from Captain Sinkankas, is to spray Kystron Clear over the slabs after marking. John says even with the roughest useage that the mark remains clear and easy to see right up to the point where you are ready to finish the back. (Kystron Clear is available at most paint stores and is a "paint bomb" or spray. One can should last for several thousand cabochons.)

Slab selection in making cabochons will not be mentioned, except to say that a very thin slab will result in an extremely low dome cab. About 5 mm seems to be a standard in slab thickness. Material under $2\frac{1}{2}$ mm should be returned unless it has been obtained for some special purpose requiring such thin pieces.

Once the slab is selected, then select the area desired, using template and marking pencil. (An excellent marking pencil may be made from a length of brass or bronze welding rod). Be sure the area marked contains no visible flaws. Spray with Kystron Clear and allow to dry. Once dry, the trim saw is the next step. In trimming, do not saw too close to the marking as all saws tend to chip the edges of the cut. With skill, sawing can be accomplished to within $1/16$ th inch of the marking in safety. However, a good fat $1/8$ th inch will do for an average. Once the trim work has been completed the blank is ready for the dopping process or grinding if you are one of the many who prefer not to dop. In dopping, use may be made of several modern wax melting machines but the author still prefers the alcohol lamp for all dopping processes.

Dopping compounds are many and varied in composition. Stick shellac and sealing wax are most commonly used as basic ingredients. Several firms market their own preparation. MDR of Los Angeles markets an excellent wax, mainly for faceting but successful for cabochons. In dopping, the secret seems to be to get the stone sufficiently hot to "bond" with the molten wax so that when cool, there is a definite affinity between the wax and the stone. This is best accomplished by heating the stone over an electric

lamp for some time prior to dopping; a 60 watt bulb inside a $1\frac{1}{2}$ -gallon or 1-gallon can works with good success, (A large size fruit juice can is ideal), placing the stone on the bottom of the can after it has been inverted over the light. Care should be exercised to see that no flammable material is close—including the floor—as this make-shift furnace will become quite hot over a period of time.

A dop stick is selected and the end dipped into molten wax—or wax melted and allowed to drip onto the end; then this is pressed firmly against the stone, allowing the wax to flow down from the dop to the stone. Remove from the can and let stand, stone down until the wax starts to cool. It may then be inverted and stuck in a can of sand for complete cooling. Using the sand box or can will allow the dopping of several dozens of stones at one time without having them cluttering up the entire working area.

Once the wax is cold the stone is ready to be ground on the grinding wheels.

NOTE: A favorite trick of most cutters is to achieve the bevel on the side of the stone *prior* to dopping. This is accomplished by using the trueing rest and a piece of heavy leather, such as can be procured at your local shoe shop. The leather is thoroughly wetted and placed on the rest, the rest adjusted until it is sufficiently *above* the center line of the wheel to allow a bevel of the proper slope to be ground when the stone is fed into the wheel from the top of the leather strip. The bottom of the stone should be in the up position so that the Kylonized marking is clearly visible. Exercising care and gentle pressure will allow you to achieve a perfect bevel, one that is right up to the mark.

In grinding *agate* materials, the first grind is generally made on a 180-grit wheel. However, there are those that start on a 100 or even 80-grit wheel. It is believed that a 180-grit, or even a 220-grit gives more control in the preliminary grinding and this is important as here the basic shape of the dome of

the stone is being achieved. An insufficient amount of grinding will result in a much longer time on the finer grit wheel or in a flat topped cabochon.

Once this grinding is completed to your satisfaction, then repeat the grinding on a finer grit wheel. The author uses a 320 for this second grinding and then goes to a 400-grit sanding cloth. From the 400-grit cloth another step-down is made, going to either a 600-cloth or a home-made leather sanding disc. This leather disc was made by using a plywood disc and a circle of plywood assembled together and then tacking the leather to the bottom of the disc.

The leather "floats" free around the inner edge of the plywood circle and so conforms to the shape of the stone. A final sanding compound such as is used by commercial optical firms is used with this leather disc. The results are most gratifying. Care in using such a contrivance must be exercised; however, to be sure to always allow the stone to follow the wheel and not to sand "against" the direction of wheel travel. To do so would invite disaster if the stone were to dig into the leather. A broken stone, dopstick and possibly a finger or fingers could result. Once this final sanding has been accomplished a semi-final polish will exist on not a few stones while others will be perfectly smooth and a delight to the eye. Incidentally, tigereye will actually seem to "gleam" when finished in this manner, even to the "end" grains.

Polish may be applied after the dops, stones and hands have been thoroughly washed. You will find that washing between each step is almost a must if you are to obtain scratch-free results.

In polishing, a number of different means are available. Probably the most common is the hard felt wheel. Polish agents will vary from mother's Bon Ami—"hasn't scratched yet," to expensive Linde A. Cerium Oxide is preferred by most, not only from a standpoint of cost but for results achieved. It is used successfully on nearly any type wheel and

a good high polish can be obtained on nearly all 5, 6, and 7 hardness materials. Agate is generally considered to be 7 in hardness; however most inclusions making the patterns may vary from 3 to 8 in hardness. Cerium seems to handle all with success. It is noted that several dealers have recently increased the price of Cerium Oxide. It is not believed that this raise was justified, at least the author has received no report on an increase in the basic cost of this item.

The author often applies a "second" polish to his stones, especially if, after completion, they have been lying around in boxes or papers for a considerable length of time. This "second" polish is merely a buffing against a stitched cloth wheel using a good red rouge as the polish agent. This removes any dirt and dust that may have accumulated and dresses up the stone once more. Among agents and means of polishing the wooden wheel should not be overlooked, especially on those types of agate that make beautiful finished stones but seem to undercut during every process. Such stones will respond to a fine diamond powder mixed with vaseline and a hard wood wheel approximately grooved. The diamond bort should be the finest obtainable, "6400" being considered satisfactory. Such wheels do generate a considerable amount of heat and care must be exercised not to crack the stone or to have it come off the dop.

When the polish is considered completed, the stone should be closely inspected for minor scratches. It may be that these can be removed on the polish wheel but occasionally it will be necessary to return to one of the sanding discs. If the stone is scratch-free then it is ready to be turned for polish on the bottom. The stone can generally be removed by placing the dop and stone in the icebox overnight. Next morning a slight pressure will cause the stone to come free. In stubborn cases it may be necessary to reheat until the point is reached where the stone will slide off the melted wax. Wax remaining on the stone may be removed by soaking in al-

cohol. Scraping with a knife blade is not recommended.

The polish of the back is a repeat of the foregoing process except that every effort is made to keep it flat—unless a double cab is being cut.

Once this portion of the work is completed, the stone again removed from the dop, washed in warm water with a little soap to cut any polish powder or grease remaining—then it is finished. The results are only bound by your ability as a lapidist. Either you have a symmetrical well formed stone, or you don't. The polish is either excellent, or it isn't.

Your pride of workmanship will cause you to return unsatisfactory stones to the grinding wheels while those that are excellent will find their way into your collection or be mounted in gold or silver. A good cabochon is a delight to the eye. A poor one isn't worth a second glance. Size is not a criteria for good stones either. Fine workmanship can be expressed as well in a stone only 3 x 5 mm as one that is 30 x 50 mm. A good way to judge your stones is by comparison. If you do not have a museum in your town, then check at one of the many shows given by the clubs, or study your friend's work, perhaps he has a trick or two you do not know. Most of us will share our "secrets" and everyone wishes to improve his work.

How are your cabochons?

The display of cut cabochons often imposes problems not encountered in showing faceted stones or mineral specimens. They have a tendency to slide in most mount boxes and to be difficult to display to advantage unless they are in some sort of display box. The author still prefers the Riker mount box but has now taken to placing a drop of rubber cement or a drop of glue on the back of the cabs to hold them in place. Another means of display for small cabs that is very effective is to glue them to a calling card. Blank cards may be obtained from your local printing shop for a most moderate price. The back of the card can be used to list information about

the material, size of stone, when cut, or anything else that appeals to you.

Tricks of the trade, new methods or machinery used in cutting, polishing, or displaying as well as items of general interest will always be enthusiastically received and published wherever possible by this column.

Several dealers have asked the author to try their products and it is with pleasure that a report may be made that in nearly every instance the product was most satisfactory. The high quality of most dealers' products, is today accepted without question. A fact which shows that dealers impose on themselves a rigid requirement to obtain and pass on to us, only the best available materials.

While the author feels that he cannot, in justice, exclusively recommend any one product, he can and does, make mention wherever possible of dealers having high quality materials and products of which he has personal knowledge.

Rockhounds Accommodated!

Editor R&M:

I would like my name entered in the Visiting Rockhounds Welcome column. Besides stopping to visit and chew rocks a bit, we also have a small summer resort and can accommodate visiting rockhounds if they would wish to stop for a day or week to do some collecting in our area. Highway M95 goes right by our place (Witch Lake) and this summer I opened up a small rock shop where I can meet the RHs and do some trading.

Bob Schenk

R1, Box 71, Republic, Mich.

Sept. 3, 1956

An Advertiser Extends His Thanks!

Editor R&M:

Your 'World News on Mineral Occurrences' and 'With Our Dealers' seems to attract more attention (and business) than a display ad. This isn't written grudgingly but to compliment you on these departments and express my sincere thanks for the good publicity you have given me in these sections.

Will continue to pass on things of interest as they come to my attention.

Bob Daniel, prop.

Natural Gems

795 E. Currahee St.,

Toccoa, Ga.

Sept. 17, 1956

THE GEM COLLECTOR

Conducted by Bill Cole
408 Dickinson, Chillicothe, Mo.

TOPAZ

No stone could be better suited as a birthstone for November than the Topaz as its golden color blends so well with the colors of Autumn. The Topaz is indeed a very beautiful and durable gem with a hardness of 8 on the Mohs scale which makes it very resistant to scratches, and thus it is quite suited for wear in a ring, and the golden color harmonizes quite well with Gold of the ring.

Topaz is composed of Aluminium Fluosilicate, and is formed in pockets in Pegmatite which are abundant in Aluminum Silicate which is acted on by acid vapors rich in Fluorine. It is therefore found associated with Fluorite, Cassiterite, and Tourmaline. The color of Topaz runs from water clear to blue and green, however the rich golden yellow is the most popular color. A very attractive pink shade is obtained by heating certain yellow stones from Brazil. The refractive index varies from 1.607 to 1.640 which means that a cut gem has very good sparkle and fire. The S.G. differs slightly with the color, the water clear stone is the heaviest with a S.G. of 3.57 and the natural pink the lightest with a S.G. of 3.50. The Topaz also possesses a very perfect cleavage parallel to the basal plane and so some care must be exercised in mounting a gem so as to protect it from blows which may cause cracking or feathering in a stone. So much for the physical properties of Topaz, now for a bit about its history.

For many centuries Topaz has been used as a gem and very much admired, but only in comparatively recent times has Topaz been recognized as a separate gem; for in Pliny's time any yellow stone was referred to as Topaz and in many cases this is true today.

Now for many years the Romans looked upon any yellow gem with disfavor be-

lieving it to make the owner weak, however, the Greeks admired yellow as a color for gems, and so Topaz was very popular with them. And since much trade was carried on by the Greek and Roman gem merchants, the wily Romans were probably the suckers in many deals involving Topazes.

The principal locality for Topaz used in modern jewelry is in Brazil near Ouro Preto, which is in the area around Minas Geraes, here a multitude of shades of yellow and golden stones have been found in the same Pegmatite dikes that have yielded so many magnificent gems familiar with this part of the world. A little farther north of this area many stones are found in the streams in the form of water worn pebbles. These range in color from colorless to blue and are very beautiful when cut. Some of the other localities which yield gem grade Topaz, are Ceylon, where all colors from yellow to green are found as water-worn pebbles. Japan also produces many fine brown stones which fade to yellow on exposure to sunlight. An area yielding many fine large colorless crystals, that are much in demand by collectors and crystallographers is in Northern Nigeria, Africa. Here the crystals are found in the Pegmatite dikes and in the streams, and these stones are unsurpassed for their clarity and crystal form. A notable American locality is near Pikes Peak, Colorado. There many fine crystals of a fine brownish yellow shade have been found in the past years and it's quite likely that many more potential gems lie in wait for some hardy soul to free them from their tough matrix.

Today much as in the time of the Romans many people refer to any yellow gem as a Topaz with some locality as a prefix. Such an example is Brazilian Topaz or Smoky Topaz which is really the yellow variety of Quartz, Citrine,

which is much softer and not as brilliant as the genuine Topaz of Brazil. Another gem known as Oriental Topaz is really the yellow variety of Corundum which is a great deal harder than Topaz and no one should feel too bad if he or she finds out that the ring they are wearing turns out to be Oriental Topaz as it is

much more valuable than the genuine gem.

Any one who has a gem collection should have at least one example of Topaz so if you don't already have one write your favorite dealer as most of the gem or mineral dealers have some type of Topaz to offer.

VISITING ROCKHOUNDS WELCOME

The following subscribers would be delighted to have rockhounds call on them when passing through their cities. If any one else wants his name added to the list, just let us know.

R. A. Richards, Box 44, Morristown, Ariz.

Mrs. John A. Talbot, 1221 W. 6th Ave., Pine Bluff, Ark.

Rose Wey, 12525 S. Rose Ave., Downey, Calif.

Meade B. Norman, 1524 Mitchell Ave., Tallahassee, Fla.

Bert C. Cole, 1424 - 11th St., Lewiston, Idaho.

Galena Rock & Mineral Museum, Route 20 & 80, Galena, Ill.

Steve Sturm, 521 Roosevelt Ave., Kewanee, Ill.

F. L. Fleener, 1415 Rosmer St., Joliet, Ill.

Leroy H. Grossman, 211 N. Park Ave., Batesville, Ind.

Edward Rushton, 730 Bexley Road, West Lafayette, Ind.

Rex Lucas, Sumner, Iowa.

David B. Sleeper, Box 4, Sabuttus, Me.

Leroy Leisure, 500 Townsend Ave., Baltimore 25, Md.

Mrs. Marion E. Hull, 704 Gratiot Ave., Saginaw, Mich.

Robert Schenk, R1 Box 71, Republic, Mich.

Carl F. Lemin, 624 E. Division St., Ishpeming, Mich.

Brentwood Lapidary & Gem Shop, 8913 White Ave., St. Louis 17, Mo. Phone WOodland 2-4067.

Robert Kissick, 7140 Theodore Pl., St. Louis 20, Mo.

Alvin W. Kemp, 231 Elmwood Blvd., Jackson, Mo.

Edward T. Barone, 48 Elmwood Rd., Verona, N. J.

Clark P. McLean, Brass Castle Road, RD #1, Belvidere, N. J.

Don Alfredo, 322 Linda Vista, Las Cruces, N. Mex.

Vernon Haskins, East Durham, N. Y.

Harold J. Lienemann, 62 N. Gordon St., Gouverneur, N. Y.

Robert Ransom, 906 Woodland Ave., Schenectady, N. Y.

William N. Secrist, 193 Lehigh, Rochester 19, N. Y. Phone GEnesee 8216M

Visiting Rockhounds Welcome (Continued)

Donald V. Dalton, Box 68,
Chimney Rock, N. C.

Dept. of Physical Science,
Belmont Abbey College,
Belmont, N. C.

Fred J. Teague, 1612 3rd Ave.,
S. W., Hickory, N. C.

D. R. Holder, 4485 Indiana Ave.,
Winston-Salem, N. C.

Mr. & Mrs. Clarence Carey,
Collins, Ohio

Bill Berke, 1446 Earlham Dr., Dayton 6,
Ohio.

Albert Laws Kidwell, 1410 Terrace Drive
Tulsa, Okla.

Rev. Wm. J. Frazer, 625 Main St.,
Moosic 7, Penn.

Mrs. Ammon Schwartzbach,
2239 Logan St., Harrisburg, Pa.

Paul M. Popovich, 124 Lincoln Ave.,
Leechburg, Pa.

Donald H. Leeds, 2025 Westfield
Terrace, Bethlehem, Pa.

Leighton Donley, Box 101, Miners Vil-
lage, Cornwall, Pa.

H. C. Van Tassel,
8009 Westmoreland Ave.
Pittsburgh 18, Pa.

Adolph Hillstead, 1309 4th St.,
Brookings, S. D.

M. S. Ortman, Ortman Museum, 6 mi. N.
of Marion, S.D.

Mrs. Edwin P. Olson,
Beresford, S. D.

P. M. Plimmer, Box 701, Alpine, Texas.

Howard V. Hamilton, 1340 Crandall
Ave., Salt Lake City 6, Utah.

Charles A. Steen, Utex Exploration Co.,
Inc., Moab, Utah.

James M. Fagan
Wallace, Va.

G. W. Weber, 1320 Portland Ave.,
Walla Walla, Wash.

Send it Along With Yours!

Editor R&M:

Please renew our subscription to R&M. It gets more interesting all the time. Enclosed also is \$3.00 additional for a new found mineral and lapidary friend. We loaned him all our back issues and when returning them he said, "Here's my \$3.00. Send it along with yours."

Kenneth & Gene Butler
703 N. 13th
Duncan, Okla.

July 23, 1956

Gives Advertiser a Plug!

Editor R&M:

I would like to give one of your advertisers a plug. After visiting Mr. Howard Pate at Fluorescent House in Branford, Conn., I am eager to agree with his claim of the 'largest selection of fluorescent minerals in the East'. His display is even more impressive than many museum collections. If you have not seen it, be sure to do so.

E. T. Smith,
76 Dry Hill Rd.,
Norwalk, Conn.

Sept. 6, 1956

Women's Corner Improves R & M!

Editor R&M:

I enclose money order for next year's (renewal) best and most interesting reading on the subjects most dear to a rockhound's heart—ROCKS AND MINERALS Magazine.

Thanks for such a fine magazine and much improved now that the 'Women's Corner' has been added.

Mrs. Ammon Schwartzbach
2239 Logan St.,
Harrisburg, Pa.

Sept. 19, 1956

Club and Society Notes

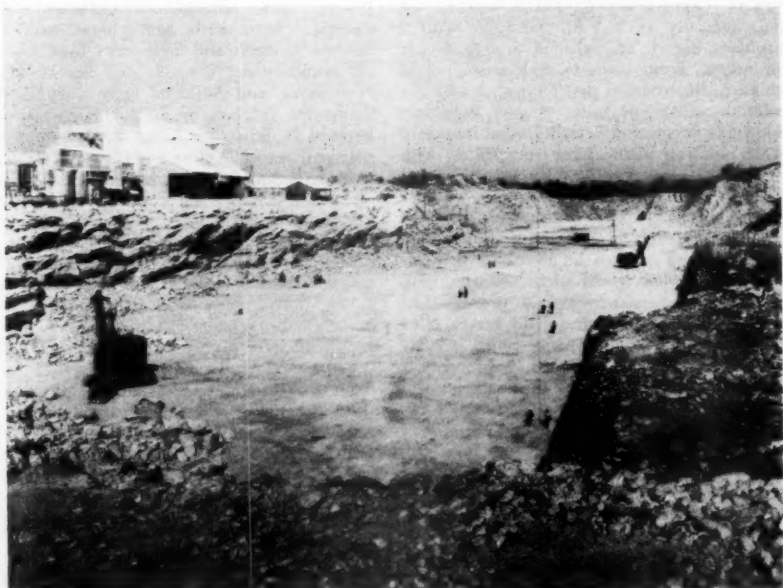
East

Mineralogical Society of Pennsylvania

The August Excursion of the Mineralogical Society of Pennsylvania was held Sunday, the 12th at the Keystone Trap Rock Quarry at Cornog, Chester County, Pa. thru the courtesy of the owners Messrs J. and H. Galt. There were 154 persons in attendance. Many attractive specimens were obtained, principally of the unusual blue quartz, pyrrhotite, chalcopyrite, epidote, allanite traces, amphibole asbestos, calcite, pyrite and garnets. No one was fortunate enough to find a specimen of the very rare Ancylyte which was found here by the late Samuel G. Gordon on several occasions, being familiar with it from his Greenland experiences. The exact spot has long since been completely quarried away. The trip was another enjoyable occasion for the M.S.P.

Field Trip, October 14, 1956

To the quarry of the Limestone Products Company, Lime Crest, (Sussex County) N. J. There were 187 persons registered, the weather was perfect with agreeable temperature and the immense quarry offered an inspiring challenge. The rock of the quarry consists mostly of metamorphosed, pre-cambrian limestone; described by Dr. Kemble Witmer of the New Jersey Department of Conservation as complexly folded and faulted with intrusive dikes and dike-like zones of altered limestone resulting from hot ascending waters, which have caused replacement, in some areas up to nine inches in width. Many interesting minerals occur in these zones of replacement in the pegmatite dike areas and in the upper surface of some of the limestone beds. Specimens of the following species were obtained, some of which were quite small, nevertheless interesting as indicating the possibilities of the place: allanite, aragonite, biotite, calcite in variety, chondrodite,



Portion of Limestone Products Co., quarry, Lime Crest, Sussex Co., N. J., scene of Mineralogical Society of Pennsylvania Oct. 14, 1956, excursion.

feldspar, graphite, hornblende, malacolite, norbergite, phlogopite, pyrite, pyrrhotite, quartz, ruby corundum, scapolite, titanite, tourmaline and tremolite.

It was quite a privilege to be permitted to visit this most interesting place and too much cannot be said in praise of the courtesy extended to us by the owners.

Harry W. Trudell,
Chairman Publicity Committee.
1309 Highland Ave.
Abington, Pa.

**Mineralogical Society of Pennsylvania
Symposium—March 17, 18, 1956
(Belated report due to loss of original
manuscript in April mail)**

The M. S. P. has every reason to be proud of the results of its Third Symposium, held at Doylestown, Pa. March 17-18th, 1956. There was a splendid co-operation among the members, from hard working President Evans, his board of associates, to the very last exhibitor there prevailed a fine fellowship and friendly rivalry. Every exhibit had its merits. Chief Burgess, Captain George Butler, opened the affair officially at 1 P.M. Saturday, with a hospitable speech of welcome to our Society and guests. From then on enthusiasm ran at a high pitch, recorded music blended with the hundreds of happy voices into a symphony of joyous contentment. Weather; That important factor, was just plain "nasty" on Friday, with a four inch snow but Saturday was clear and brisk, with sleety roads, however. Sunday, cantankerous day, started with an all day "baby blizzard", the very worst day of the winter. Nevertheless, it takes a lot of cussed weather to completely knock out a real mineralogist. This fact was proved by a total attendance of close to a thousand, members and guests. Nine states were represented with over seventy exhibitors—AND SUCH exhibits; from brilliant gems to fossils, no phase of the earth sciences was neglected from the Lafayette College (Art-Montgomery), presentment of the origin of Serpentine minerals, thru the bewildering Muth, Bell, Bozzelli, Pietsch, cut gem exhibits and the Belz matchless cabochons. A high spot of the show was the Jewelry displays of the Evans family, the Lawns and Ellen Davidson, exquisite and most difficult to describe. The fifty specimen fluorescent show of David J. Dear and Archy S. Myers, downstairs, was a mighty popular attraction. FOSSILS, as beautiful and as interesting as fossils can be, were

shown by Wagner Institute of Science (Harry Roberts), Howard Ennis, Dr. Hopkins, David Kissileff, Jos. Kish senior and junior, Edward Gallob, Bosworth Irvine, Emily Bauhof, Gerald Gelston and Will Shulman. The Loux family's showing of local (Bucks County) fossil wood was outstanding. There was also a truly magnificent exhibit of large specimens of mineralogical aristocrats, unique for beauty and quality by the following: Will Shulmans, C. C. Hamiltons', Dr. Hopkins, Bertha Gordon, Floyd Faux, Mineral Industries, Newark Mineralogical Society (Russ De Roo), Harold and David Evans, Barrington Ivers, The Bauhofs and Harold Poole. Collections of certain species in variety, Quartz-Harold Poole, uncut opals—Franklin—Marshall College, (L. Duersmith). Asbestos, (Rock to many finished products) from a seven thousand specimen collection of Edward Duke. Other specials: Cornwall, Pa. Iron Mine, by-products of rare species by Leighton S. Donley and son Robert. A large collection of Calcium bearing species by James B. Irvine. Six cases of Pennsylvania species by James J. Notaris. A fine set-up of Kibblehouse Quarry, Perkiomenville with various species found there, by David S. Jennings; Radio active minerals, Geiger counters etc. Charles Owens. Mineral cleaning by James Irvine. Foote Mineral Co. Lithium bearing minerals, from both hemispheres, with 39 finished products and their many uses. Beautiful smoky quartz crystals from Eureka (Pa.) by Evelynne and William Loux. Small, neat fluorescent displays by Stanley Kieronski and Howard B. Schanely. Large number of choice polished species by Gene and Charles Belz. Paul Seel's an arrangement of Mexican obsidian carvings with copper. Three exhibits on mineral identification Floyd Faux, (Physical), John H. Bertrand, (Optical), and John Gibson, (Chemical). B. F. Shephard, twenty-nine incomparable polished spheres, of colorful species. The micro mount, microscope and instructive chart "How to do it" by Wm. and Edna Hunt, Paul Seel and Wm. Yost attracted wide interest. Other exhibits, Mrs. Juliet Reed, geological story of the earth in Map and Model. Aero Service Corp. (Aerial Prospecting) a fine display of plastic, topographic, relief maps, General collections, Barrington Ivers of Maine, Nova Scotia minerals, John H. Bertrand minerals Easton area, Floyd Faux & Leonard Tielmann various species. Wm. Di Vito "Thumb-nail" collection. Paul Seel the "ELEMENTS", H. W. Trudell, thirty-five Calcites. Accident prevention, Richard Hickson, Various species Max Ritter, also Boy Scout Council of Doylestown. Bibliography of Mineralogy by S. Harbert Hamilton.

Dealers' tables were never without their crowds of interested and eager customers. Colorful and excellent taste was shown by the exhibitors in their displays adding much to the general beauty of the show.

Four lecturers, Dr. E. T. Wherry, Dr. Arthur Montgomery, Dr. Richmond E. Myers and Russell Bell gave outstanding talks which also added materially to the Symposium.

Harry W. Trudell,
Chairman, Publicity Committee
1309 Highland Ave., Abington, Pa.

Keene Mineral Club

On June 2nd. we held our annual meeting at the home of Elmer and Mary Roentsch, in Walpole, N.H., with a picnic on their wide porch which overlooks a wide panorama of fields and hills.

This picnic brought to a close a very interesting year of programs, including the following: Slides and talk on Western trip by the Wetherbee's. Talks on the Lithia Minerals by several of the members, with specimens of these minerals. A talk on Gem Stones and Birthstones.

The February meeting is our annual dinner meeting. After partaking of an exceptionally fine turkey dinner, Mr. J. Alfred Dennis, the Mayor of Keene and also one of our club members, showed slides, and gave a talk on his recent trip to Europe.

At another meeting Dean Dwight H. Carle gave one of his interesting talks on Glacial rocks and formations. Most of our meetings are held at the Keene Teachers College, the first Saturday of each month.

For our April meeting we invited the Bellows Falls Club. For the program we had "Stones and Gems of the Bible with a prepared talk." We also held another auction of minerals. Mr. Sherman Reed gave a travel talk at our May meeting, mostly about caves. The executive committee plans to bring in a slate of officers for the June meeting.

After our picnic supper Julian Wetherbee, President, conducted the business meeting. Reports were read, then the election of new officers. When all ballots were counted, the report was: President - Edwin Ellis; V.P. - Ruth Pratt; Treas - Helen Davis; Sec. - Sadie Wetherbee.

The new President appointed a Field-trip Committee, Julian Wetherbee, Franklin Mack, and Walter Winch.

After the business meeting closed, Mrs. Helen Davis had charge of games. One game Helen Davis made up called, "Gems and Minerals from Mine to Mind."

Field trips this year include visits to two places in Mass., Richmond, N.H., Raymond, N.H., and Lovejoy Pit, near Conway, N.H.

Sec. Sadie A. Wetherbee
22 Wheelock St.
Keene, N.H.

Lapidary & Gem Society of New York Hotel Paris, New York City.

Here are some of the Club's Highlights for the past few months:

1. Last May a field trip to the Middleville section of Herkimer County, N.Y. proved to be an unusual success. More than thirty dyed-in-the-wool Rockhounds showed up for this more than 500 mile week-end excursion. Almost everybody found excellent specimens of Herkimer "diamonds."

In June, we had a one-day field trip to Fonda, New York—now that the new wonderful New York Turnpike is finished. About 25 attended! Many large Herkimers were found at a newly developed locality. Many crystals were found lying on the Surface! At the well-known older Fonda Locality, many beautiful small "diamonds" were found. Many were brilliantly smoky.

2. During the summer months, many club members made trips to various parts of the country such as Maine, Connecticut, North Carolina, New York and New Jersey localities, California, etc. Nova Scotia and Canada were also "invaded." The result was a "General Braggin & Showin Session" at our first September meeting. Some fantastically beautiful mineral and gem specimens were displayed and discussed.

Lou Soland and his new bride made a seven week trip going from here to Niagara Falls, then up thru Canada and on to Los Angeles—and then back across the country. The result was a brilliant display. Some of the more outstanding specimens were Ruby Sphalerite, Joplin Calcite, Scenic Agates, Malachite, Thomsonites, Labradorite.

Martin and Rose Seidman displayed Tourmaline XLS, Smoky Quartz XLS, ROSE QUARTZ XLS, Morganite and Aquamarine XLS from their Connecticut and Maine vacations.

Joe Rothstein showed some very pretty Agates with small drusy dark Amethyst XLS from Nova Scotia.

Dave Scheinhaus had some translucent green Beryl and nice Emeralds in Matrix from North Carolina.

Other general items were lovely Agate from Panama, green Prehnite from the Paterson, N.J. area, and Carnelian from Watchung, N.J.

All in all we had a delightfully fast-moving and thrilling meeting.

Many future surprise fields trips are being planned.

Martin & Rose Seidman
Publicity "CHAIRMEN"
137-05 83rd Avenue
Kew Gardens 35, New York
BOulevard 8-4382

New York Mineralogical Club, Inc.

Curt Segeler called the meeting at 8:15 p.m. October 17, 1956, at Columbia University, New York City, and the summer hiatus was officially over.

The evening was devoted to summer collecting experiences and Joe Rothstein led it off with an account that touched mainly with collecting in Parrsboro and Blomiden in Nova Scotia with accent on amethyst and agate.

Ted Schoen followed with a description of the new turn that collecting has taken at Franklin with the collecting area now controlled by the town police. Ted found some rhodonite crystals and etched the calcite in one and came up with quite a specimen.

Vic Fribil really went off on a tear this year to the wild west where you "can smell the agate." Vic described the easy style of Western collecting against our more rugged eastern type. He swapped Franklin minerals along the way and came away with beautiful minerals and fossils including a rare cycad. Western hospitality was wonderful along the entire 11,000 miles.

The Segeler family, Louise and Curt, displayed a 20 mineral set panelboard which was a revelation in artistic presentation. The prizes on the board was some brazilianite as well as a pyrolusite pseudomorph after maganite.

Martin Seidman, a guest, talked on the Lovejoy pits in Conway, New Hampshire, described the collecting area and the minerals found.

Dave Seaman showed some monazite crystals found near Harrison, N.Y., where the New England Thruway is being built.

During the business portion of the evening Joe Stromwasser reported on a trip to Fonda, N.Y., and environs for Oct. 27 and 28th. Fred Hayden gave the state of the Treasury. Joe Stromwasser brought in a design for a club pin which was passed around. The President, Curt Segeler, spoke briefly on proposed programs for the year and the November program will be a round table discussion on zeolites scheduled for November 21 at Columbia University; the December program will be on Industrial Minerals of New York by Dr. John Broughton, the state geologists and will be given on Dec. 19, also at Columbia.

Dave Seaman gave a report on publications and gave a brief review of Record of the Rocks by Horace Richards, Rocks and Rivers by Ellis W. Shuler and a preview of his own basic kit of Rocks and Minerals with text designed for children which will be available at Brentano's Bookstore in New York.

Fred Hayden brought in some newspaper clippings of interest to the members. Some discussion ensued on efforts to find the papers of the late G. Stanton and the club will again make a determined effort to locate them. Joe Rothstein gave a report on the Eastern Federation meeting, and Curt Segeler then finished the business

section with a discussion of a proposed training program aimed at newcomers.

Joe Rothstein, Sec.
255 W. 84 St.,
New York 24, N.Y.

Newark Mineralogical Society, Inc.

Several worth-while field trips, under the direction of our Field Chairman, Mr. M. Kidzus of 23 Ravine Drive, Matawan, N. J., were taken during the past summer and fall. On Aug. 5th. 25 members journeyed to the St. Clair stripping in Penn. and were rewarded with specimens of quartz, pyrite, siderite, galena, and sulphur 'diamonds.' On Sept. 9th a large crowd went to Stirling Brook in the N. Plainfield, N. J., area in search of carnelians, quartz, and cat's eyes. An auction and swap table were very popular. On Oct. 27th our group joined the Newark Lapidary Society at the Franklin, N. J., Buckwheat dumps for a late afternoon supper and evening in search of fluorescent minerals with U. V. lights.

The 329th regular meeting of the Society was held on Oct. 7th. with Pres. L. E. Shaw presiding. After a short business meeting, eleven members spoke of their summer collecting experiences. Mr. & Mrs. Max Bareiss exhibited several specimens purchased on a European trip. Mr. Leonard Morgan showed carnelian, chalcedony and tiger eye from the Paterson, N. J., area. Mr. Richard Milburn's travels took him to Fluted Rock, Ariz., for petrified wood. Mrs. E. P. Wallace had an unusual rhodochrosite specimen purchased at the Baltimore Convention. Mr. E. Talamini distributed specimens of stilbite from Bay Creek, Nova Scotia. The Adirondack-Mt. Marcy area of N.Y. rewarded Mr. W. H. Clinton with labradorite. Mr. P. Kondrosky added to his famous coal collection with unusual coal apple nodules with pyrite centers. Mr. R. DeRoo showed most unusual specimens of agate and coral obtained thru exchange with Florida and California friends, while Mr. Gene Vitali had spent many hours on bookends of agate from Prospect Park, N. J. Finally Mr. Edwin Skidmore told of his experiences collecting calcite, barite and selenite crystals and agate in the Bad Lands and Black Hills; the interesting contacts he made at the St. Paul, Minn. Convention where 44,000 attended and then his trip by jeep to Lake George, Colo., where huge crystals of amazonite were obtained.

The Nov. meeting was a symposium held on Nov. 4th at Upsala College, East Orange, N. J. It was given by members of the Society and consisted of exhibits, talks and demonstrations. These included micromounts, thumbnail specimens, trimming and cleaning of rare minerals, nipper mounts, unusual specimens in form or association, minerals used in medicines, medicines made from minerals, native elements, classification, labelling, arranging and indexing

of your mineral collection and easy methods of identification by hardness, streak, dry and wet analysis.

The new officers of our Society are: Pres. Mr. Philip L. S. Lum; Vice Pres. Mr. Max Bareiss; Secretary, Mrs. Grace L. Depew (127 Kearny Ave., Kearny, N. J.); Treas., Mr. Sam Brown; Trustee for 3 yrs. Miss Pamela Dye.

Mrs. Sarah H. Sherlock,
Publicity Chairman
34 Parkway West,
Bloomfield, N. J.

Mineral Club Organized in Dover, N. H.

About 25 mineral collectors in the local area have taken steps to organize the Southeastern New Hampshire Mineral Club. Wednesday evening in the Dover Municipal Court room, the group adopted a constitution and by-laws.

Chairman Si Sandler named a nominating committee to bring in a list of officers to be elected at the next meeting, Wednesday evening, Nov. 14.

Plans were also announced for the first field trip of the club, to be held on Sunday, Oct. 28. Members will meet at the square in Raymond, N. H., at 10 a.m., and will then visit several of the large quarries in that town. Some very rare minerals have been discovered in several of the quarries.

As stated in the constitution the organization has several purposes, primarily that of stimulating interest in the subjects of geology, mineral, mining, lapidary work, mineral collecting and allied subjects.

Anyone interested in these who is at least 18 years of age, is eligible for membership. Dues are \$2 per year. The group is to meet the second Wednesday of each month, except in July and August when it is expected that field trips will be held.

Foster's Daily Democrat, Dover, N. H. Thursday Evening, October 18, 1936.

Connecticut Valley Mineral Club

The October meeting of the Connecticut Valley Mineral Club was presided over by Rev. Mr. M. W. Corbett in the absence of President Schoppee who was mineral collecting in Michigan. The reports of the Secretary for April and May were approved with corrections and the Treasurer's report indicating a balance of \$196.40 was read and approved. New members and guests were introduced.

Dr. Johansson discussed his summer's work in the Guildhall Quadrangle, Essex County, Vt., where he was employed by the Vt. Geological Survey. His area is one of the most desolate parts of the state, sparsely populated and

heavily forested. The slates, phyllites and quartzites are intruded by granites and in a few instances by mineral veins containing quartz, galena, pyrrhotite, hematite and limonite. Trap dikes of probable Triassic age and aplite dikes also cut the granite. On East Mt. hornfels with andalusite crystals was noted. Mineral collecting was generally poor with the exception of the Lake Willoughby area where limestone beds are intruded by granite sills and good specimens of essonite garnet, diopside, zoisite and vesuvianite were obtained. Dr. Johansson concluded his talk with a series of Kodachromes illustrating various phases of the geology of the Guildhall Quadrangle, the scenery of Essex County and the Lake Willoughby area.

Several members described mineral collecting localities visited this summer: Mrs. Robert Conner, Nova Scotia; B. M. Shaub, Naica, Mexico; Dr. Anderson, Center Strafford, N. H. and Gouverneur, N.Y. A. T. Hetu described the Baltimore Convention and exhibited several specimens he had purchased there.

Mrs. B. M. Shaub,
159 Elm St.,
Northampton, Mass.
Secretary Pro Tem.

Mineralogical Club of Hartford

The Mineralogical Club of Hartford opened the new season with a regular meeting Sept. 12th at Boardman Hall, Trinity College, Hartford, Conn. Members reported on summer activities and displayed their 'loot'. Our President, Robert Brandenberger, went as far as Florida and others traveled various distances. One member found some very attractive specimens right in Hartford for a most nominal sum.

The annual meeting with election of officers was held October 10th with the following slate of officers duly elected: President—Mr. Wilmot Reid; Vice President—Mr. Samuel Tuell; Secretary—Miss Ruth M. Cowdell; Treasurer—Mrs. Elizabeth Behrsing. Mr. Brandenberger was elected to the executive board. We then enjoyed a talk on our common mineral 'water' by Mr. MacCurdy of the Metropolitan Bureau, giving us a list of the history of Hartford's water supply and the present handling of this matter.

We expect to hold regular meetings at 7:30 P.M. the second Wednesday of each month at Boardman Hall, Trinity College, Hartford, Conn. Visitors are welcome.

Ruth M. Cowdell, Sec.
Summit Road, R.R. 1
Waterbury, Conn.

**6th Annual Convention, Eastern Federation,
Baltimore, Md., Sept. 27-29, 1956**

The 6th Annual Convention of the Eastern Federation of Mineralogical and Lapidary Societies, held at the Emerson Hotel in Baltimore, Maryland, on September 27, 28 and 29, 1956, marked up the largest attendance in its history of delegates and club members of the eastern clubs. The Gem and Mineral Show, and convention program, has been declared the best ever held in the East, and attracted visitors from all parts of the country. It was an outstanding success, in spite of the fact that Hurricane Flossie arrived in Baltimore on its opening day for a two-day stay.

Two post convention field trips held on Sunday, September 30, were well attended; those who went to the Chrome Line Pits in Cecil County went home with some of Maryland's famous williamsite for cabochon cutting and those who went to Delight, Maryland, collected picrolite, serpentine, drusy quartz, siderite and deweylite.

The convention program covered Rocks, Minerals, Crystals, Gems and Jewelry, with speakers all top authorities in their fields. In addition to splendid club and individual displays, there were sixteen outstanding special features of rare gems and minerals.

Henry B. Graves, of the Miami Mineral and Gem Society, is the newly elected President of the Federation. James H. Benn, of the U. S. National Museum, is the retiring president.

Paul E. Desautels, of the Baltimore Mineral Society, is the new vice-president; Mrs. Elsie Kane White, of the Gem Cutters Guild of Baltimore, is secretary, and Mrs. B. E. Hunt, of the Gem and Mineral Society of the Virginia Peninsula, is Executive Vice president and General Chairman of the 1957 Convention. Louis Eaton Shaw, of the Newark Mineralogical Society, is treasurer, entering his second term.

Judges of competitive exhibits were J. Lewis Renton, of Portland, Oregon, Past President of the American Federation of Mineralogical Societies; Dr. George Switzer, Acting Curator of the Department of Mineralogy and Petrology of the Smithsonian Institution, Washington, D. C., and John Calvin Smyth, Gemologist, of Baltimore.

Trophies and awards were won by the following:

Best in Show Trophy, Mineral Division, was won by The Baltimore Mineral Society.

Best in Show Trophy, Lapidary Division, was won by The Gem and Lapidary Society of Washington, D. C., Inc.

John M. Wise Trophy for Membership Participation was won by The Miami Mineral and Gem Society.

In the Mineral Division, first prize was won by the Baltimore Mineral Society for Cabinet Specimens; with 2nd prize going to the North Jersey Mineral Society and third to the Rockland County Gem and Mineral Society.

The Rockland County Gem and Mineral Society took first prize for Crystals, with 2nd prize going to the Gem and Mineral Society of the Virginia Peninsula.

The Mineralogical Society of the District of Columbia took first prize for Fluorescent Specimens.

In the Independent Class, Frederic and Doris Godfrey of the Gem and Lapidary Society of Washington, D. C., took first prize for Cabinet Specimens; Gerry and Will Shulman, of the Newark Mineralogical Society took first prize for Crystals and Frederic and Doris Godfrey, second.

In Family Groups, first prize went to Gerry and Will Shulman, with second prize to Edward J. Dietrich of the Gem Cutters Guild of Baltimore.

First prize for Thumbnail Specimens was won by Robert C. and Daughter Susan White, of the Gem Cutters Guild of Baltimore.

In the Lapidary Division, first and second prize for Cabochons and Baroques were won by the Gem and Lapidary Society of Washington, D. C., with 3rd prize going to the Monmouth Mineral and Gem Club.

For Faceted Stones, first prize went to the Gem and Mineral Society of the Virginia Peninsula, 2nd to the Newark Lapidary Society and 3rd to the Gem and Lapidary Society of Washington, D. C.

For Handmade Jewelry with Mounted Stones, first prize went to the Newark Lapidary Society, 2nd to Monmouth Mineral and Gem Club and 3rd to the Miami Mineral and Gem Society.

For Polished Slabs, Geode Sections, first prize was won by the Monmouth Mineral and Gem Club.

For Spheres, first prize was won by the Monmouth Mineral and Gem Club.

For Book Ends, Desk Sets, etc., first prize went to the Gem and Mineral Society of Washington, D. C.

In the Independent class, for Cabochons and Baroques, first prize ribbon went to August C. Gross, of the Gem Cutters Guild of Baltimore; 2nd prize to Theodore A. Schultz of the Gem and Lapidary Society of Washington, D. C., and third to Miss Catherine M. Muffoletto, of the Gem Cutters Guild of Baltimore.

For Faceted Stones, First prize went to J. B. Winter and J. M. Stoinoff of the Miami Mineral and Gem Society and 2nd prize to Mrs. Betty Campbell, of the Gem and Lapidary Society of Washington, D. C.

On Handmade Jewelry with Mounted Stones, first prize was won by Edward A. Geisler of the Gem Cutters Guild of Baltimore; 2nd by Mrs. Ellen H. Davidson, of the Mineralogical Society of Pennsylvania, and 3rd by Miss Elsie Lee McGeorge of the Gem and Mineral Society of the Virginia Peninsula.

For Book Ends, Desk Sets, etc., Mrs. Betty Campbell of the Gem and Lapidary Society of Washington, D. C., won first prize.

In the Club Member Division, for Cabochons and Baroques, Aubrey E. Cole won first prize, of the Gem and Lapidary Society of Washington, D. C., 2nd prize going to Donald W. Porter of the Gem Cutters Guild of Baltimore, and 3rd prize to Freda Rosenberg and William M. Croxby, showing jointly, of the same club.

For Handmade Jewelry with Mounted Stones, first prize went to Mrs. Isabella M. Coons of the Gem Cutters Guild of Baltimore.

In the Junior Division, for Cabochons and Baroques, and for Faceted Stones, first prize was won by Arthur J. Campbell, Jr., of the Gem and Lapidary Society of Washington, D. C. Second Prize was won by Kathy Pierce for her collection of Carvings, of the Gem Cutters Guild of Baltimore.

The host club, the Gem Cutters Guild of Baltimore, did not enter the competition.

Joining the 23 member clubs of the Eastern Federation at this annual meeting were the West Essex Mineral Club, of Caldwell, New Jersey, and the Geological Section of the Buffalo Society of Natural Science, of Buffalo, New York.

The Convention Committee extends sincere thanks to all who helped make this convention and show the huge success it was, with particular thanks to the national magazines for their generosity in publicizing the event.

Special thanks goes also to the Baltimore Mineral Society for their splendid aid and cooperation given the host society, the Gem Cutters Guild of Baltimore. Mrs. Elsie Kane White, of the latter club, was general chairman.

The 1957 Convention and Gem and Mineral Show will be held at the Chamberlin Hotel, Virginia Peninsula, on August 29, 30 and 31st, 1957, with post-convention field trip on September 1.

Elsie Kane White, Secretary
3418 Flannery Lane,
Baltimore, 7, Md.

South

Georgia Mineral Society

The Georgia Mineral Society held its annual dinner meeting October 15 in the ODK dining hall at Georgia School of Technology, with President H. L. Chamberlain presiding.

A brief review of the year's activities showed that the Georgia Society had been favored with a variety of interesting activities. Early in the year, a long-time member, Gilbert W. Withers, shared his experiences in the importation of a ton of jade and exhibited more varied jade specimens than the group had previously had opportunity of seeing. The first field trip of the year was to Graves Mountain, in Lincoln County, a favorite collecting ground for rutile, lazulite, kyanite, pyrophyllite, and iridescent limonite.

An optimistic picture of Georgia's prospects for finding petroleum was given by Captain Garland Peyton, director of the Department of Mines. Dr. Vernon J. Hurst, also of that Department, lectured on the crystalline varieties of quartz and a field trip led by Bob Daniels, of the Natural Gem Shop in Toccoa, gave the Society members opportunity to collect quartz crystals, smoky quartz, sagenite, rutile, and moonstone in Stephens County areas.

George Molzahn described how the Indians used minerals, and Dr. Horace G. Richards told the group of his African journey, illustrating it with Kodachrome slides. Black marble and apple-green fluorite were found near Ranger, in Gordon County, on a spring field trip. Dr. Arthur A. Pegau, mineralogist for the Virginia Geological Survey, described mineral collecting localities in his state. The month of May found the Georgia Society members panning for wire gold, corundum, and spinel in a stream east of Rutledge. In June, Dr. A. S. Furcron, associate director of the Georgia Department of Mines, reviewed mineral localities in Georgia for the benefit of members expecting to participate in a summer collecting spree.

Highlights of summer collecting were the field trips arranged by the Society. The first was to Hiawassee, in Towns County, where Jimmy Stoinoff, of Hiawassee and Miami, arranged for the group to see his extensive collection of polished ruby corundum and carried them to his favorite collecting localities. This was a two-day trip, and on the second day the members climbed Chunky Gal Mountain on Buck Creek to an abandoned corundum mine where everyone found his own specimens. The second summer trip was to Cowee Creek in Macon County, N. C., where good color rubies were obtained by a fortunate few. In August, the Society trip was to a quarry

on the banks of the Chattahoochee River south of Helen, where screening facilities had been arranged for panning garnets, gold, and smoky quartz. Garnet Hill, near Hiram, was the next goal of the collectors where varied garnet crystals were found.

At the October annual meeting, Willard Grant of Emory University's Geology Department, sketched the early history of minerals and mining in Ducktown, Tennessee (across the Georgia border), now a commercial source of the copper minerals.

Officers for the coming year, installed at the annual meeting, were Mrs. Nelson Severinghaus, president; H. L. Chamberlain, vice president; S. C. Cronheim, treasurer; J. Roy Chapman, secretary; Dr. J. G. Daniels, historian; and Dr. Lane Mitchell, museum curator.

(Miss) Erna Lee Mason
Corresponding Secretary
State Health Dept.
Atlanta, Ga.

Rocky Mountains

Rawlins Rockhounds

On July 1st, 1956, 71 persons motored to Ozark Mahoning Fluorspar Div. at Cowdrey, Colo., for a field trip. Clubs included were the Cheyenne Mineral and Gem Society, Laramie Rockologists, Fort Collins, Colo. Club and the Rawlins Rockhounds. A picnic lunch was enjoyed at the upper woods creek picnic grounds in Roosevelt National Forest—then fluorspar specimens were collected at the mine.

On Aug. 14th, at the regular meeting of the Rawlins Rockhounds, Dr. Malouf, Archaeology professor at Montana University, spoke on the 3 periods of early man's developments in Carbon County, Wyo. The 3 periods of early man in this area, according to Dr. Malouf, were (1) Folsom and Yuma, (2) Foragers, (3) late Hunters. Dr. Malouf described the artifacts associated with each period and discussed social problems affecting early man's migration.

The Rawlins Rockhounds had a booth at the Carbon County Fair with many outstanding displays.

Mrs. Effie Jaramillo, Corr. Secy.

Arizona

Mineralogical Society of Arizona October 1956 Programs

The Mineralogical Society of Arizona resumed its regular meetings Oct. 5. During

the summer informal gatherings were held at Mrs. Berlie Robart's, the Fred Burrs, the Thorntons, the Trapnells and the Van Hornes; and a field trip was taken to the Storm Cloud Mine in the Bradshaws—an old, abandoned gold mine.

Oct. 5, Arthur L. Flagg reported on the 15th Rocky Mountain Convention, held at Rapid City. This was the first time that there was no representative from the MSOA. Mr. Flagg was ill at the time, but we are glad to report that he is now back on the job again.

Floyd Getsinger described summer trips to old Arizona ghost towns on picture-taking projects; Moulton Smith, a trip down into Grand Canyon; Harry Hill, to Colorado where they found spectacular crystals of quartz and nail-head calcite; Charles Thornton, to Wyoming for fossils, Minn. gravel pits for Lake Superior agate and Safford, Ariz. for garnets; Don Price, Colorado and Horse Thief Basin in Arizona, where a tame deer tried to join their party. Marie Shepherd took a trip to Havasu Canyon, and Joe Harris covered eastern Arizona.

Milford Benham attended the International Geological Congress which met this year in Mexico City. The last time it met in Mexico was 1906. The last time in U. S., 1933. The next meeting will be in Copenhagen. The Congress meets every 4 years around the world.

Benham visited the silver mines at Durango—and described the curious settling of the ground in Mexico City. He said that Mexico City is as beautiful as any city in the world. To enjoy it most, go in spring and summer. Its rainy season begins in the fall.

The story of Arizona's Natural Resources was told in color moving pictures at the Oct. 19 meeting of the MSOA.

The pictures described the Arizona story, from the quest for the seven cities of Cibola, through the long, tedious work of the early pioneers and trail-blazers, to the reclamation of the desert by means of dams and canals. In the mountains, its timber production was shown, and on the desert—winter vegetables and fruits for markets over the U. S.

Among its mineral wealth, copper predominates. Since 1880 the Copper Queen at Bisbee has shown continuous production. At Morenci, is one of the largest open pit copper mines. Gila county produces asbestos.

The film was from the Arizona Dept. of Mineral Resources.

Ida Smith, Cor. Secy.,
2238 East McDowell,
Phoenix, Arizona

California

Slover Gem & Mineral Club

Slover Gem and Mineral Club presented a rock hammer to their 100th member, Varell Shepard, at the Sept. meeting. This club has members from 6 San Bernardino Valley communities.

Collector's Corner

For the special benefit of collectors who may be living in areas far removed from other collectors we have opened this feature. In this corner, a collector may have his name and address listed for the purpose that other collectors may write him in the hope that through correspondence, exchange of ideas and specimens, new friendships may be formed. Listings are free.

H. J. Kendrick, Ophir,
San Miguel Co., Colo.

Theo. Kirschman,
Haswell, Colo.

Meade B. Norman, 1524 Mitchell Ave.,
Tallahassee, Fla.

Steven Sturm, 521 Roosevelt Ave.,
Kewanee, Ill.

Victor Felger, 126 Esmond St., Fort
Wayne, Ind.

Edward Rushton, 730 Bexley Road,
West Lafayette, Ind.

Jimmy Henderson, (13 yrs.),
1345 W. 10th St., Bogalusa, La.

M. H. O'Brien, 2927 Vandenberg Rd.,
Muskegon 36, Mich.

Mrs. Marion E. Hull, 704 Gratiot Ave.,
Saginaw, Mich.

They sponsor a jewelry making and silver-smithing class at Colton High School, which meets each Monday night.

Nine cases of specimens are being prepared for exhibit in the San Bernardino County Fair at Victorville, Oct. 3 to 7. These include fossils, crystals, cabochons, polished geodes and petrified wood, lapidary novelties including bookends and spheres, and jewelry made and mounted by club members.

Aileen McKinney
Bulletin Editor and Publicity Ch.
1080 Rancho Ave., Colton, Calif.

John Wilson, 44 Van Cort. Pk. Ave.,
Yonkers 2, N. Y.

Joseph Jeski (13 yrs.), 676 Humboldt
St., Brooklyn 22, N. Y.

Lynn Wilder (16 yrs.) Box 51,
East Randolph, N. Y.

Robert Pasca,
395 Sussex Rd.,
East Meadow, L. I., N. Y.

Harold J. Lienemann,
Box 42, Gouverneur, N. Y.

Allison Cusick, RD#1,
Unionport, Ohio.

Mrs. Ammon Schwartzbach,
2239 Logan St., Harrisburg, Pa.

Mrs. Tres, Lawhead, 3rd St.,
Roulette, Pa.

Walter Scott Gray, Jr., 417 S. Perry Ave.,
Denison, Tex.

Earl Medlin (16 yrs.),
1301 N. Oak,
Mineral Wells, Texas

P. M. Plimmer, Box 701, Alpine, Texas.

G. W. Weber, 1320 Portland Ave.,
Walla Walla, Wash.

M. W. Anthony, P. O. Box 260,
Bellingham, Wash.

W. Erlach, P.O. Box 52,
Umtali, Southern Rhodesia,
South Africa.

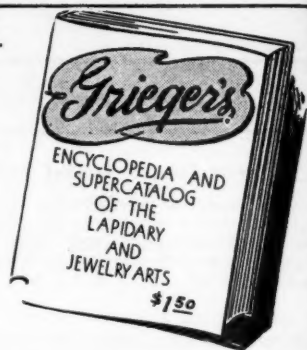
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Here are some actual letters we received from customers who purchased our Encyclopedia.

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Ted H. Lattin

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Albuquerque, New Mexico

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Ben Hur Wilson, Chicago, Illinois

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ROCKS AND MINERALS

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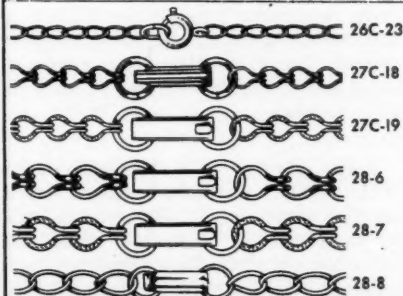
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MAIL ADDRESS: P. O. Box 4185, CATALINA STATION, PASADENA, CALIF.
ROCKS AND MINERALS

WITH OUR ADVERTISERS

Conducted by James N. Bourne
% Rocks and Minerals, Box 29
Peekskill, N. Y.

Advertisers are cordially invited to submit News Items to this Department.

From Ralph E. Merrill of Minerals Unlimited, 1724 University Ave., Berkeley 3, Calif., we received the following item of interest:

"Your readers might be interested in knowing that we issue lists periodically, some of interest only to the collector of 'fine minerals', others of interest to everyone from the beginning collector through to college instructors in search of a source of good material for identification courses. For example, our recent list of minerals of economic interests includes more than one hundred mineral specimens (and this is only a portion of our total mineral stock), many of them from several localities. This list is available free of charge to anyone who asks for it.

"We are also your source for cutting material, Lapidary equipment, mineral sets, baroque gems, grinding wheels, diamond saws, micromount boxes, jewelry tools, and scintillators. *Please remember:* We want you to be completely satisfied with mineral specimens purchased from us. We regard all shipments as being 'on approval' until you have had a chance to look them over. We prefer that you return unwanted items rather than have you keep them and be dissatisfied with us. We do appreciate it if returns are made within ten days after you get the minerals, as it simplifies our book-keeping. We look forward to being of service to you." Note: Minerals Unlimited has many satisfied customers and would like you to be included in this group.

Ernest J. Beissinger, 417 Clark Building, Pittsburgh 22, Pa., relates to us the following:

Six months ago we established our own cutting shop in Idar-Oberstein, Germany.

This wholesale and lapidary service is extended to dealers and rock shops everywhere here and abroad.

"Dealers and rock shops may send their rough facetting material to Ernest J. Beissinger of the above address for this service."

Note: Mr. Beissinger has been advertising with us for quite some time and is well known as an importer of precious stones. We would like to recommend this "cutting service" of rough facetting material to dealers and rock shops who may be interested to avail themselves of this service rendered by Mr. Beissinger's cutting shop in Germany.

We had the pleasure of meeting Mrs. Touchette of Denyse, Inc., P.O. Box 5867, Bethesda 14, Md., at the convention held in Baltimore this past September. They are advertising in R & M with this issue. Their specialties include pendants, tie clasps, bracelets, necklaces, gold and silver mountings, etc. Their material is reasonably priced and of excellent quality. So readers, here's a chance to order some very fine gifts from Denyse, Inc., not only for the holidays, but year around. They'll be pleased to receive your order and you'll likewise be pleased with your purchase.

Clay Ledbetter, 2126 McKenzie Ave., Waco, Texas, sent us a beautiful onyx handled letter opener. It certainly will be useful as we just about wore out our other one. We fully appreciate your sending it to us, Mr. Ledbetter, as it will further speed up the opening of our many letters received daily. We invite our readers to take notice of Clay Ledbetter's ad in the classified section of R & M with each issue.

Louis H. Roth, of Radiant Ultra Violet Products, Box 5, Cambria Heights 11, New York, is one of our new advertisers with this issue as per our "Where to Get It" column. We received the following item from Mr. Roth:

"I have just designed and am about to manufacture three different kind of units, short-wave UV, long-wave UV and a combination of the two. The short-filter is of the optically polished variety and superior to Corex A. The long wave filter is of the rolled variety but of such a superior quality that there is absolutely no purple cast of any kind. The non-fluorescing surface remains *black*.

"At any rate we shall market same very soon *below* the prices of the lowest priced units currently on the U.S. market. It will be a mail order business. We will sell direct only. Along with these units, I will market a unit that will supply sufficient current to any of the lamps for \$13 or less and that will make the units portable."

Note: Mr. Roth has gone all out in his effort to produce these custom quality lamps that he now has on the market. Your order placed now with Radiant Ultra Violet Products will receive prompt attention and you'll be well satisfied with the results obtained by owning one of these lamps. Take note of their ad in "Where to Get It" column of this issue.

We are also pleased to introduce International Import Company, 604 Peachtree St., N. E., Atlanta 8, Ga., who plan to advertise regularly via the classified column of R & M from now on. Their ad will be the largest in our classified section and will feature some excellent buys. George A. Bruce, President of International Import Co., has been kind enough to send us the following literature in regards to his company and their policy in dealing with customers:

"We are direct importers from the major gem and art centers of the world with greatest emphasis on the cut gem, both faceted and *en cabochon*. These excellent connections make it possible for

us to offer the collector stones of the highest quality at an astonishingly low price. We urge their studied comparison regarding this. In a sincere attempt to give prompt and accurate service, we carry a large inventory including many rare specimens as well as the popular gems in a variety of sizes, etc. We have compiled a price-list booklet listing a cross-section of hundreds of stones, art objects, jewelry, etc., to be used as a guide in ordering. This booklet is sent to anyone prepaid upon request. We ship on 10-day approval to reliable individuals submitting business references including their bank or to those accompanying their order with a deposit. In the latter case, we refund immediately and in full the amount due in proportion to any possible rejections. This we irrevocably guarantee."

This item received from Filer's, formerly of 1344 Hiway 99, San Bernardino, Calif., will be of interest to readers and reads as follows:

"Filer's have just built a new and larger store at S. Alabama & Hiway 99, Redlands, Calif., and invite all mineral collectors to drop in and look over their large stock of mineral specimens. Their mineral business has increased so much during the past few years that they no longer have the time to deal with the lapidary trade—NO LAPIDARY MATERIALS OR SUPPLIES ARE STOCKED.

"Filer's started in business ten years ago, and their business has steadily increased until their old building became too small. They supply minerals to collectors, universities and museums, both in the U.S. and foreign countries. They specialize in choice crystals, especially from foreign countries.

"In order to make it more convenient for mineral collectors, they are now open Sundays, closed Mondays. All mineral collectors are invited to drop in and visit their new store and look over their stock."

From W. R. Olsen, Route 1, Box 213, New Port Richey, Fla., we received a sample gift of their 20 polished gem specimen box. "These retail for \$1.00 and we keystone them to dealers," relates Mr. Olsen. Very nice indeed. We also received a sample of their small agatized coral geodes sawed in two and the rims polished. The small ones are offered at \$1.00 per pair postpaid. They have larger sizes, too, up to \$7.50. Very, very nice.

Mr. Olsen also mentions for benefit of our readers:

"We do not conduct a regular rock shop but we are always happy for Florida visitors to drop in and visit with us. We are on the main highway U.S. 19, about 1000 feet south of the river bridge on the east side of the highway."

Note: Mr. Olsen will be pleased to have you look up his ad in the classified section of R & M and more-so pleased to accept your order in regards to the above material mentioned.

We have been informed by Gemcrafters of 12038 Wilshire Blvd., Los Angeles 25, Calif., that they have split their business into two separate locations. One, Gemcrafters, to handle sales, and the other would house the shop and be known as Valley Gemcrafters. Gemcrafters are to be at the above address and Valley Gemcrafters at 7319 Canoga Avenue, Canoga Park, Calif.

Information re: to Valley Gemcrafters reads as follows:

"A look at the shop today would show a marked improvement over the old set-up at Gemcrafters of several years ago. Today this modern, completely-equipped lapidary shop has several banks of equipment: slab saws, dimensioning saws, grinding and capping units, special mounting equipment, lapping and polishing wheels, etc. In addition, there is a row of tumblers, a large well-stocked "rock yard", an attractive office, and well landscaped grounds. It is here, also, that the tumblers and other equipment with the Gemcrafters label is manufactured.

It is undoubtedly one of the finest lapidary shops in the west, if not in all America.

"In addition to equipment, we trust to be able to again supply the finest quality gemstones and gem stone jewelry to the public, at prices they can afford to pay. In addition, we are now turning out a large line of cabochons, in a variety of sizes and materials, that are equal to and, in most cases superior to, the finest imported cabs on the market. We will be happy to consider any inquiries concerning either gemstones or equipment, and will answer all such inquiries promptly, giving both estimates and advice freely to any correspondent. As always, we shall endeavor to produce for our customers superior quality results on any order at reasonable prices."

Note: This has been quite an expansion program undertaken by the above advertiser of long standing with R & M, and we certainly wish them success in their endeavor to give better service at reasonable prices to their many customers whom I'm sure will more than ever be pleased with their dealings with 'Gemcrafters' or their affiliate 'Valley Gemcrafters'.

Spectrum Techniques, P.O. Box 4004, Denver 9, Colorado, who has been one of our new display advertisers with the past few issues sends us the following item in regards to their products. Spec-Tec Blacker Blacklights:

"SPEC-TEC'S well engineered blacklight units offer a fast, accurate approach to identification, grading and analysis in fields such as mineralogy, geology, mining, sanitation, criminology, education, general laboratory work, fluorescent displays and a host of others. SPEC-TEC'S blacklights are available in long wave length, short wave length or both in a single unit known as the dual wave length model. Information will be gladly given in regard to special applications. Spectrum-Techniques is equipped to manufac-

ture blacklights of higher power and a wide variety of special equipment to meet your individual requirements."

Note: Spectrum-Techniques will be pleased to receive your inquiry and orders will be handled promptly. We have had the pleasure of seeing one of the above blacklights demonstrated and heartily recommend them as to their use in any of the above subjects mentioned.

We received a nice letter from William C. Casperson, formerly Curator at Paterson Museum, Paterson, N. J., who has just moved to Florida. Their new address and place of business which is to be known as CASPERSONS is at RD #2, Sebastian, Micco, Florida. His letter reads as follows:

"Mrs. Casperson and I have purchased a property in Florida consisting of a dwelling and gift store all furnished and stocked with shells and gifts. We brought down about 3 tons of minerals and plan to sell minerals to tourists and collectors directly and by mail.

"We have a lovely place on U.S. Highway No. 1, midway between Melbourne and Vero Beach, 16 miles south of Melbourne."

Note. Mr. Casperson is advertising with us in the display section of R & M with this issue and would be happy to have visitors to Florida this coming winter drop by and pay him a visit. They would be most welcome.

NOTE: We would like to take this opportunity to thank our many advertisers, both old and new for their cooperation in forwarding us news items and all sorts of literature in regards to their business, products, and what they have new to offer their customers. If the mention in this column is in some way helpful to them, even in a small way, it is good news to us as that is the purpose of this department: To bring readers, customers, and the advertisers closer together where all may benefit. This is our goal—Thank you.

Memorial of Joseph William Bradley:

Joseph W. Bradley was born in Connellsville, Pennsylvania, March 30th, 1887 and passed away at his home in Los Angeles August 20th, 1956 after twelve years of suffering due to malignancy in the bones. He came to the west as a lad and so loved the wide open spaces that he went to work in the offices of the Copper Queen Mine in Bisbee, Arizona in 1912. From there he was transferred into Mexico as a nucleus of a new company only to be shipped out three times in two years as a refugee as the Revolution between Villa and Carranza was taking place. Tiring of this sort of existence and many narrow escapes he returned to the States and with the exception of an interval in the State Tax Dept. of Arizona he spent the most of his life with two large mining companies, namely the Mudd-Wiseman Enterprises and the Gold Fields of South Africa which operated the Golden Queen Mine in Mojave between 1935 and 1944. Mr. Bradley returned to the first mentioned company after the gold mines were shut down in 1944 but had to retire from his many duties connected with mining in 1946 due to the outbreak of cancer again and with his wife Vera Lucile opened their own mineral business, known as "The Bradleys", October 1st, 1947. He is survived by his widow Lucile and a sister Lillian Linville also of Los Angeles. He dearly loved the mineral business and all the many friends that made that business possible. He will long be remembered for his gentle ways and generous help to the many seeking to avoid the pitfalls of mining by giving freely of his experiences and knowledge not only of mining technics but legal procedure, having served in these many capacities.

Attention Rockhounds!

Editor R&M:

I have opened a gem shop and also made provisions where rockhounds can find their own stones on 480 acres—at the Crystal Gem mines located in Florissant, Colo.

Everett O. Aubuchon
Box 182
Cripple Creek, Colo.

Aug. 15, 1956

**INVEST
IN GOOD
MINERALS**

NOVICE COLUMN

In the Sept.-Oct. 1953 R&M, Gordon ViGario, 2231 Pine St., Bakersfield, Calif. suggested that a Novice Column be opened for rank beginners in mineral collecting. These amateurs, who do not know one mineral from another, may submit their names to the Novice Column.

It is our hope that collectors having duplicates may donate a few specimens to one or more novices who are expected to acknowledge receipt of specimens received and to reimburse each sender for postage paid on the packages. Please print or write plainly the names and localities of all specimens sent novices, and if 2 or more minerals appear on the same specimen, identify each. Remember the novices do not know one mineral from another, so please be as helpful as you can.

The following is the 19th list of novice collectors:

- Gene Newsom, (12 yrs.), 1401 W. Wert St., Paragould, Ark.
- Merril Scott, (10 yrs.), 9 Sunview Ave., San Anselmo, Calif.
- Robert W. Linley, Jr., 411 Romanock Rd., Fairfield, Conn.
- Mr. & Mrs. C. H. Weber, Jr., 39 Benson Place, Fairfield, Conn.
- Meade B. Norman, 1524 Mitchell Ave., Tallahassee, Fla.
- Miss Donna Furr, 1524 Mitchell Ave., Tallahassee, Fla.
- A. H. Brannon, Hiawassee, Georgia.
- Steven Sturm, 521 Roosevelt Ave., Kewanee, Ill.
- Mrs. Arthur Millard, RR #1, Box 212, Waukegan, Ill.
- Dorothy Nonamaker, (16 yrs.), 1011 Bertrand, Manhattan, Kans.
- Eugene C. Spencer, Jr., Picott Road, Kittery, Maine.
- Steve Norton, 155 Winter St., Westwood, Mass.
- Mrs. Walter Akerly, Box 215, Bangor, Mich.
- Don Shaner, 1614 Anthony, Columbia, Mo.
- D. K. Chalmers, 1644 Oak Ave., Had-don Heights, N. J.
- William C. Doviak, 121 Prospect St., Garfield, N. J.
- Doretta Jean Keller (13 yrs.), 32 Herbert Terr., Livingston, N. J.
- Chester G. Spence, 310 N. Freeman Rd., Orchard Park, N. Y.
- Robert Pasca, (13 yrs.), 395 Sussex Rd., East Meadow, L. I., N. Y.
- Lewis Valachovic, 110 Burton St., Johnstown, N. Y.
- Paul S. Hughes, 134 Crawford Ave., Toledo 12, Ohio.
- John F. Kane, (13 yrs.), 1978 Plymouth, Philadelphia 38, Pa.
- Yvonne Bodnar, R.D. #1, Berick, Pa.
- Roy McCrory, (15 yrs.), 5329 Post Rd., East Greenwich, R. I.
- David C. Eastman, (14 yrs.), Mendon Rd., Ashton, R. I.
- Mariana Michener, (13 yrs.), 1142 Circle Drive, Kingston, Tenn.
- Mrs. E. C. Holt, 420 S. Fannin, Tyler, Texas.
- R. H. Beck, 3413 Burton St., Ft. Worth 5, Texas.
- Beverly Anderson, (10 yrs.), 127 O'Canoe Pl., Hampton, Va.
- J. R. Edington, 904 Hobson, Walla Walla, Wash.

PUBLICATIONS RECENTLY RECEIVED

Seaman—The Story of Rocks and Minerals (A guidebook for young collectors).

By David M. Seaman, 100 pages, many illustrations $7\frac{1}{2} \times 10\frac{1}{4}$. Harvey House, Publishers, Irvington-on-Hudson, N. Y. . . . \$2.50

From Dinosaurs to the Atomic Age, Cave Men and Uranium Prospectors. . . Gold Panning. . . Primitive Rock and Mineral Hunters. . . Minerals that Glow in the Dark. . . Superstitions about Stones, Minerals and Gems. . . besides these exciting stories, Mr. Seaman also tells us how to start a collection, where to look, what to do, and how to classify it.

We read about the 3 kinds of rocks: Igneous, Sedimentary and Metamorphic; the minerals used by Indians; volcanic bombs; stalactites and stalagmites. There are experiments to try; stories of fossils and rocks that changed into other rocks; clues the experts use for detecting minerals, like how to test a mineral for hardness, streak, tenacity or fracture.

Do you know the location of the greatest gold deposit in the world and where to find the Island of Gems? Have you heard of a flexible rock that may contain microscopic diamonds or of the two students who discovered a gem pocket? You will know all these things when you read this book.

A complete chapter is devoted to gems. . . diamonds, the ruby, sapphire, other birthstones, stories of famous gems, the lost emerald mines of the Incas, the Hill of Precious Stones.

There are many mineral oddities to pique your curiosity. . . the Red Hair Mineral, the Mineral that Disappears in Water, Petrified Lightning, the Magnetic Stone, the Mineral that Makes You See Double and a score of others.

The young rock hunter and collector will find the generous reference section most helpful. It contains tables of non-metallic minerals, the color, streak and hardness of common minerals, ore minerals, and a sample classification of minerals by the Dana System, plus a Glossary and Pronouncing Index. Mr. Seaman has written a fascinating book which, page by page unfolds the story of the Science of Rocks and Minerals.

Illustrated with more than 100 pictures, including 48 photographs in the full Color-Photo-Dictionary.

Radcliffe-Roberson—Atomic Energy

By A. Radcliffe, B. Sc., A.I.P., and E.C. Roberson, B. Sc., Ph. D., A.R.I.C., illustrated by F. H. Holdernes, B. Sc., 142 pp., 13 illus. $5 \times 7\frac{1}{2}$. Published by Philosophical Library, Inc., 15 East 40th St., New York 16, N. Y. . . . \$4.75

Scientists have been probing into the real nature of ordinary things for over 2,000 years. By the early 1800's they felt fairly sure that everything was made of atoms, and that atoms really existed as extremely tiny indestructible elastic balls. Today we are even more sure that atoms exist, but since Becquerel, some sixty years ago, discovered that some atoms explode, we no longer believe they are indestructible.

Becquerel's discovery led finally to an understanding of the enormous power locked up in atoms and thus to the way in which this power could be used.

This book tells how the existence of atoms was proved and it shows what atoms are really like. It also tells what happens when atoms explode, and how the energy released in these explosions can be used in bombs or to drive trains, ships, aeroplanes and electric generators.

Chayes—Petrographic Modal Analysis. (An elementary statistical appraisal).

By Felix Chayes, Geophysical Laboratory, Carnegie Institution of Washington, 113 pp., tables and figures, $6 \times 9\frac{1}{4}$. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. . . . \$5.50

A rock is a mineral aggregate. To the petrologist, the kinds and amounts of mineral species it contains are matters of first importance. With regard to determination of the kinds of minerals present, petrography is a highly developed descriptive science, and we shall not be further concerned here with the general problem of qualitative identification.

The composition of rock expressed in terms of the relative amounts of minerals actually present is called a mode. We refer to a procedure which yields such a statement, and usually to the statement itself, as a modal analysis. Modes may be obtained by recalculation from bulk chemical analysis, by the counting of crushed fragments, or by the measurement of relative areas underlain by each of the mineral species in a polished slab of thin section of the rock.

Opal Issue

The October 1956 NEWS LETTER published by Cranbrook Institute of Science, Bloomfield Hills, Mich., was devoted entirely to opals (opal Issue). It is a 16 page publication, beautiful opals in color on front and back covers. The Australian opal fields are especially featured in the publication.

Subscription rate for the NEWS LETTER \$1.00 a year; single copies 15c.

California Division of Mines Available Publications

A 6-page list of available publications (with prices) is now available from the California Division of Mines, Ferry Building, San Francisco 11, Calif.

Midwest Gem Trails

Midwest Gem Trails, by June Culp Zeitner, is a field guide for the gem hunter, the mineral collector, and the tourist. It covers South Dakota, Michigan, Illinois, Iowa, Wisconsin, Ohio, Kansas, North Dakota, Nebraska, Indiana, Missouri, and Minnesota. This is an intensely interesting publication, with many good illustrations, contains 64 pages and sold for only \$2. Published by the Mineralogist Publishing Company, 329 S.E. 32nd Ave., Portland 15, Ore.

Virginia Publication

Sulfide Mineralization in the Shenandoah Valley of Virginia, by Paul Herbert, Jr., and Robert S. Young.

Recent zinc prospecting in the northern Shenandoah Valley of Virginia has indicated the possibility that a part of this area may become a new mining district. The most intensely mineralized part of the district centers near the town of Timberville, a few miles west of New Market.

This report is designed to provide detailed information on the various prospects, as well as broader aspects of regional hydrothermal mineralization, in an effort to aid future prospecting.

58 pp., 15 pls., 10 figs, 3 tables. Published as Bull. 70, by the Virginia Geological Survey, Charlottesville, Va.

Desert Gold and Total Prospecting

Desert Gold and Total Prospecting by Henry Curtis Morris is a series of rambling recollections and reminiscences of a mining engineer who knew the West in the boom days at the turn of the century—written 50 years later at the Cosmos Club in the city of Washington. This book is intensely interesting and we recommend it heartily to those who love mining, especially for gold and silver.

60 pages, illustrated, published by Henry Curtis Morris, 4000 Cathedral Ave., Washington 16, D.C. \$2.50

Japanese Publication

The Science Reports of the Toboku University, Sendai, Japan.

This issue, vol. V, No. 2, published in March 1956, is on mineralogy, petrology, economic geology—all in English. The first 4 articles are on mineralogy:

1. Chemical Compositions of Perthite, Ilmenite, Allanite and Pyroxmangite occurred in Pegmatites of a Vicinity of Iwaizumi Town, Iwate Prefecture.
2. Titanite from a Pegmatite at Ishikawa Town, Fukushima Prefecture.
3. New find of Scheelite at Sekihata in Ishikawa Town, Fukushima Prefecture.
4. Beryl from a Pegmatite at Ameda in Ohigashi Village, Fukushima Prefecture.

French Publication

Rapport Annuel Sommaire Sur La Recherche Géologique Et La Prospection Minière Effectuées En 1955.

114 pages—all in French.

Published by Centre Geologique de la F.O.M., Rue La Fontaine, Chatenay-Malabry (Seine), France.

Rock Club Manual

This book by Karl von Mueller has been prepared especially for those who not only want to form a mineral club but want ideas, suggestions, and help on how to keep it going. The manual is the most complete on the subject that has yet been printed. It tells how to organize a club, elect officers, conduct meetings and field trips, how to obtain publicity, run the club paper, sources of income, club library and a number of other ideas that are vital to the healthy growth of any organization.

Published by Gazette Publishing Co., 45397 Airport Sta., Los Angeles 45, Calif.—94 pages, spiral bound, \$2.00. California purchasers please add 3% sales tax.

Classification of Rocks

Golden, Colo.—A best seller among both the amateur "rock hounds" and the professional geologists, the Colorado School of Mines Quarterly, "Classification of Rocks", is now available in a revised edition.

Originally published early in 1955, the volume has sold out two printings to become the School's most widely distributed professional publication.

Written by Dr. Russell B. Travis when he was assistant professor of geology at Mines, it is designed to prevent confusion that results from the many varied methods of rock nomenclature. Dr. Travis has named rocks on the basis of visible features, using terms and conventions generally accepted at present.

As a result, the publication has been in wide demand with organizations engaged in exploration for petroleum, metals, non-metals and radioactive deposits whose development programs depend on standardization of rock names among many men and departments.

Included in the Quarterly are full instructions for naming any rocks—igneous, sedimentary, or metamorphic—and three complete reference charts, each nine by sixteen inches, for use in the field or classroom. Sixty-six photographs illustrate features described in the text.

The new edition of "Classification of Rocks" may be secured from the Department of Publications, Colorado School of Mines, Golden, Colo. for \$1.00 postpaid in the United States.

A Collecting trip in Australia (Continued from page 568)

I prefer just the plain clotted. Still, it went down well.

I'm enclosing some concentrates from the creek beds in the pegmatite areas around Mount Isa. They look pretty; I hope you like them. My R & M magazines continue to come through; they are popular over here!

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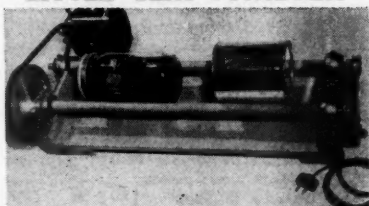
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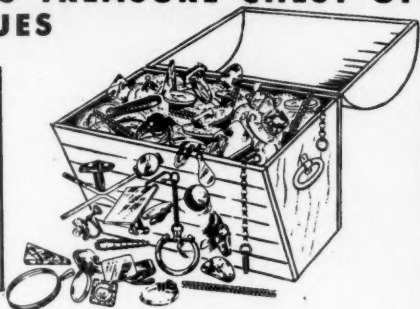
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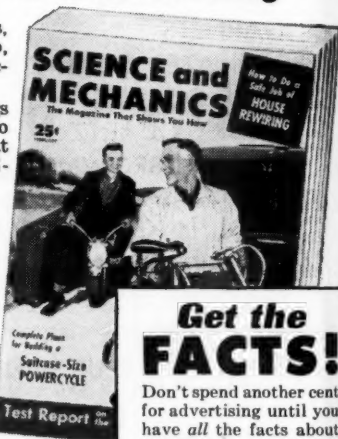
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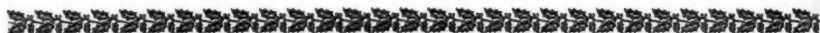
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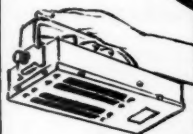


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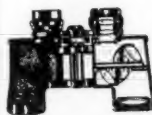
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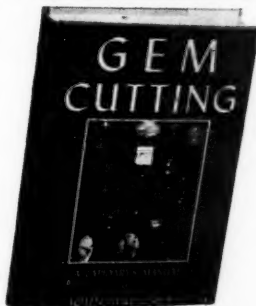
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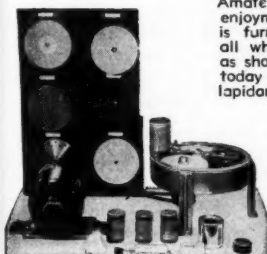
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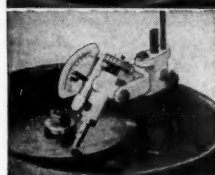
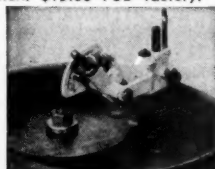
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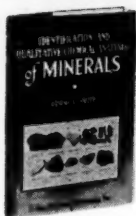
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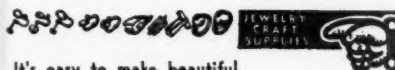
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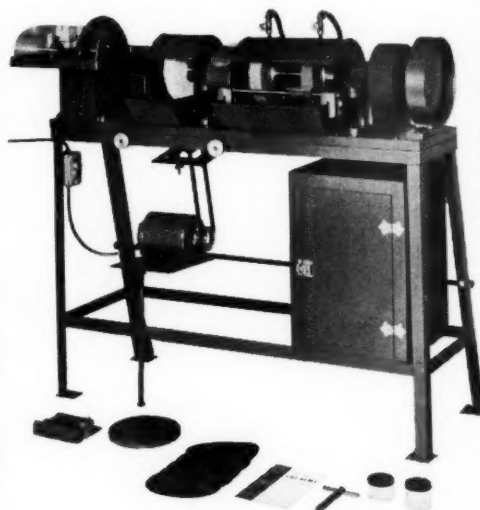
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